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HAND DELIVERED

April 8, 1996

Mr. S. Mario Stavale
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Dear Mario,

Enclosed please find a draft copy of the Harbor Gateway Center Master Plan Transportation Study. This study contains a complete analysis of the proposed development of the site. It also contains a mitigation package designed to reduce the project traffic impacts to the extent feasible. With implementation of the program, only two significantly impacted intersections would remain.

We would appreciate your review of this document, as well as the review by the rest of the team. Since we are still finalizing the related projects descriptions with the City of Torrance, we anticipate minor revisions to the analysis will be required during the next week. We would also like to receive and incorporate any appropriate team comments during that same time frame. Once revised, we will be making a formal submittal of this study to LADOT.

Please feel free to call me should you have any questions during your review.

Sincerely,


George Rhyner
Senior Transportation Planner

GR:mlc
C1918
enclosures

cc: Craig Fejnor
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MENLO PARK

LOS ANGELES

SEATTLE

BOE-C6-0131408

**TRAFFIC ANALYSIS FOR THE
HARBOR GATEWAY CENTER MASTER PLAN
MULTI-USE COMMUNITY**

Prepared for:

MCDONNELL DOUGLAS REALTY COMPANY

Prepared by:

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April 1996

EXECUTIVE SUMMARY

The project under consideration is the development of a 450,000 square foot shopping center and a 2,517,700 square foot industrial/office park. The shopping center could contain up to 4,000 theater seats and 30,000 square feet of restaurant uses. The project site is currently occupied by a 2,419,000 square foot distribution/warehouse facility used by McDonnell Douglas Aircraft Company. Previously, the site buildings had been used for aircraft manufacturing and assembly, with a total of approximately 5,500 persons working at the site. Following project completion, the site trip generation would be approximately 32,800 daily trips with 2,738 trips occurring during the morning peak hour and 3,057 trips occurring during the afternoon peak hour. The current site uses generate 8,560 daily trips, 845 morning peak hour trips and 1,105 evening peak hour trips.

The 170.2-acre project site is located within the Harbor Gateway section of Los Angeles. The site is bounded by 190th Street on the north, the Southern Pacific Railroad tracks paralleling Normandie Avenue on the east, industrial and residential uses on the south, and Western Avenue and industrial/vacant properties on the west. Access to the shopping center would be provided via driveways along 190th Street, up to two project driveways from Normandie Avenue which cross the railroad tracks and an internal roadway which will extend along the western edge of the site. Access to the industrial/office park would be provided by the internal roadway network, which will extend across the site and intersect with 190th Street, Normandie Avenue and Western Avenue.

This traffic study analyzes existing and future morning and afternoon peak hour traffic conditions within the area that is expected to be directly impacted by the proposed development. This traffic study also identifies the potential cumulative

traffic volume created by future related projects within the study area. Trips resulting from these related projects, as well as from the general, region-wide growth projected by SCAG, and the land-use intensifications within the City of Los Angeles projected by the City, were taken into account in the projection of future traffic conditions for Year 2006 for both with and without project scenarios.

Of the forty-one intersections analyzed in this study, thirty-one of the study intersections could be significantly impacted by traffic generated by the proposed project in one or both of the morning and evening traffic hours, prior to mitigation.

In order to minimize the traffic impacts of the project, a series of traffic reduction measures and roadway improvement measures was developed. All measures are considered feasible in that each is achievable within either existing public rights-of-way or the project site. The following measures are recommended to mitigate the project's significant traffic impacts to the degree feasible:

- o Compliance with Ordinance No. 168,700 (Transportation Demand Management and Trip Reduction Measures). This ordinance focuses on incorporating TDM facilities into the design of new buildings to promote alternative modes of transportation (see Appendix B). It should be followed in the design and construction of the project site and buildings.
- o Compliance with SCAQMD Rule 2202. The South Coast Air Quality Management District (SCAQMD) has adopted a rule designed to reduce the air pollution impacts of commute trips. This rule, unlike the rules it replaces, does not mandate trip reduction programs but allows individual employers to select from a variety of options. However, most employers have continued to select ridesharing programs as the most cost-effective method

of reducing air quality impacts. If site employers implement these trip reduction measures, 15 percent or more of the peak hour traffic generation from the industrial/office park component of the project could be eliminated.

- o Bus Transit Improvements. This project should work with the appropriate transit districts (i.e., Gardena Transit, Torrance Transit and MTA) to improve transit service to the site. Further, the sidewalks through the sites should be designed to provide attractive pedestrian routes to and from transit stops.
- o 1. Hawthorne Boulevard and 190th Street -- Restripe 190th Street and restrict parking to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes.
- o 3. Crenshaw Boulevard and I-405 Freeway Southbound On/Off Ramps -- Modify the traffic signal to provide an eastbound right-turn phase to overlap the northbound left-turn phase.
- o 4. Crenshaw Boulevard and 190th Street -- Restripe 190th Street and restrict parking to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes.
- o 5. Crenshaw Boulevard and Del Amo Boulevard -- Restripe Crenshaw Boulevard, restrict parking and modify the traffic signal to provide dual left-turn lanes in the southbound direction.
- o 7. Western Avenue and Artesia Boulevard -- Restripe Western Avenue and restrict parking to convert the existing northbound and southbound right-turn-only lanes to through/right optional lanes.

- o 8. Western Avenue and 182nd Street -- Restripe Western Avenue and restrict parking to provide separate northbound and southbound right-turn-only lanes.
- o 9. Western Avenue and I-405 Freeway Northbound On/Off-Ramps -- Widen and restripe the westbound approach to the intersection (i.e., the off-ramp) to provide two left-turn-only lanes and a right-turn-only lane instead of the existing two-lane configuration.
- o 10. I-405 Freeway Southbound On/Off-Ramps and 190th Street -- Flare the west leg of the intersection, restripe 190th Street, restrict parking and modify the signal to provide dual left-turn lanes in the eastbound direction.
- o 11. Western Avenue and 190th Street -- Restripe the north leg of the intersection and modify the signal to provide dual southbound left-turn lanes. Additionally, fund the installation of the City's Automated Traffic Surveillance and Control (ATSAC) signal timing system at this location. The ATSAC system provides real-time traffic flow monitoring and signal timing modifications, to maximize intersection capacity.
- o 13. Western Avenue and Project Roadway -- Construct the internal project roadway to provide a three lane westbound approach to Western Avenue including a left-turn-only lane, a through/left optional lane and a right-turn-only lane.
- o 14. Western Avenue and Del Amo Boulevard -- Restripe the eastbound approach to convert the through lane to through/left optional lane.

- o 15. Western Avenue and Torrance Boulevard -- Modify the median island and restripe the roadway along Torrance Boulevard, and modify the signal equipment to provide dual eastbound left-turn lanes. Restrict parking and flare the roadway to provide a northbound right-turn-only lane.
- o 16. Western Avenue and Carson Street -- Restrict parking and flare both roadways to provide right-turn-only lanes in the westbound, eastbound and northbound direction.
- o 17. Western Avenue and Sepulveda Boulevard -- Restrict parking and flare Western Avenue to provide right-turn-only lanes in the northbound and southbound directions.
- o 18. Western Avenue and Sepulveda Boulevard -- Restrict parking and flare Western Avenue to provide right-turn-only lanes in the northbound and southbound directions.
- o 19. Project Roadway and 190th Street -- Flare the roadway, restrict parking and restripe 190th Street to provide dual left-turn-only lanes in westbound direction and a right-turn-only lane in the eastbound direction. Construct the internal project roadway to provide a three-lane northbound approach including a left-turn-only lane, a through/left optional lane and a right-turn-only lane. Construct the signal to provide east- and westbound left-turn phasing, opposed north/south phasing (assuming a driveway along the north curb is a fourth intersection leg) and an eastbound right-turn phase concurrent with the northbound phase. Fund the installation of ATSAC at this intersection.

- o 20. Normandie Avenue and Artesia Boulevard -- Provide dual left-turn lanes in the southbound direction by restriping and flaring Normandie Avenue, restricting parking and modifying the signal.
- o 22. Normandie Avenue and I-405 Freeway Northbound On/Off-Ramps -- Widen the westbound approach (off-ramp) to provide two left-turn-only lanes and one right-turn-only lane instead of the existing two-lane approach. Additionally, restripe the northbound approach to provide two through lanes and an exclusive right-turn-only lane to facilitate freeway access.
- o 23. I-405 Freeway Southbound Off-Ramp/Project Driveway and 190th Street -- Widen and restripe 190th Street and restrict parking to provide dual westbound left-turn lanes. Construct the project driveway to provide dual left-turn lanes and a right-turn-only lane in the northbound direction. Flare the off-ramp to provide a left-turn-only lane, one through lane and a shared through/right-turn lane in the southbound direction. Install a signal with separate westbound and northbound left-turn phasing.
- o 24. Normandie Avenue and 190th Street -- Flare 190th Street and modify the signal and railroad crossing equipment to provide dual left-turn-only lanes in the eastbound and westbound directions. Modify the signal equipment to provide a southbound right-turn overlap phase. Restrict parking and restripe Normandie Avenue to provide a third northbound travel lane. Additionally, fund the installation of ATSAC at this location.
- o 25. Normandie Avenue and Project Roadway/Francisco Street -- Construct the project roadway to provide a three-lane eastbound approach including

a left-turn-only lane, a through/left optional lane and a right-turn-only lane. Modify the signal to provide opposed phasing the eastbound and westbound directions.

- o 26. Normandie Avenue and Torrance Boulevard -- Restrict parking and restripe Normandie Avenue to provide a third northbound through lane. Restrict parking and restripe Torrance Boulevard to provide a westbound right-turn-only lane.
- o 27. Normandie Avenue and Carson Street -- Restrict parking and restripe Carson Street to provide a westbound right-turn-only lane.
- o 30. Vermont Avenue and Artesia Boulevard -- Flare and restripe Vermont Avenue and modify the signal equipment to provide dual left-turn lanes in the northbound and southbound directions.
- o 31. Vermont Avenue and 190th Street -- Restripe 190th Street and modify the signal equipment to provide dual left-turn lanes in the eastbound and westbound directions. Fund the installation of ATSAC at this intersection.
- o 32. Vermont Avenue and Torrance Boulevard -- Restrict parking and restripe Vermont Avenue to provide a right-turn-only lane in the northbound direction.
- o 33. Vermont Avenue and Carson Street -- Restrict parking and restripe Vermont Avenue to provide a southbound right-turn-only lane.
- o 34. I-110 Freeway Southbound Off-Ramp and 190th Street -- Flare the southbound approach (off-ramp) to provide three lanes including a left-

turn-only lane, a left/right optional lane and a right-turn-only lane instead of the existing two-lane approach.

- o 35. I-110 Freeway Northbound On-Ramp and 190th Street -- Modify the median island, restrict parking and restripe 190th Street to provide dual eastbound left-turn lanes.
- o 36. Figueroa Street and 190th Street -- Restrict parking and restripe Figueroa Street to provide a southbound right-turn-only lane.
- o 39. Hamilton Avenue and Torrance Boulevard -- Restrict parking and restripe Hamilton Avenue to provide a three-lane southbound approach including a left-turn-only lane, a left/right optional lane and a right-turn-only lane.
- o 40. Figueroa Street and Torrance Boulevard -- Restrict parking and restripe Figueroa Street to provide a southbound right-turn-only lane.

Upon completion of the above improvements, project traffic impacts will be reduced to a level of insignificance at all but two intersections. Significant traffic impacts may also remain along area freeways.

TABLE OF CONTENTS

	<u>Page</u>
Introduction	1
Project Description	5
Environmental Setting	8
Streets and Highways	9
Existing Traffic Volumes	11
Public Transportation	14
Analysis of Existing Conditions	16
Project Traffic	21
Traffic Generation	21
Trip Distribution	22
Traffic Assignment	25
Parking and Access	26
Future Traffic Conditions	28
Related Projects/Cumulative Growth	29
Analysis of Future Traffic Conditions (With and Without Project)	37
Impacts on Regional Transportation System	41
Mitigation Measures	45
Appendix A: Trip Generation by Project Phase	
Appendix B: Transportation Demand Management and Trip Reduction Ordinance (Ordinance No. 168,700)	

LIST OF FIGURES

<u>Figure No.</u>		<u>Page</u>
1	Site Vicinity Map	2
2	Project Site Plan	6
3	Existing AM and PM Peak Hour Traffic Volumes	12
4	Related Projects Location Map	32
5	Future Peak Hour Traffic Volumes - Without Project	33
6	Future Peak Hour Traffic Volumes - With Project	35

LIST OF TABLES

<u>Table No.</u>		<u>Page</u>
1	Critical Volume Ranges - Level of Service	17
2	Level of Service - CMA Values	18
3	Critical Movement Analysis Existing (1996) Conditions	19
4	Trip Generation Formulas	21
5	Project Traffic Generation	23
6	Directional Trip Distribution	25
7	Related Projects Descriptions	30
8	Critical Movement Analysis Summary Without and With Project	38
9	Freeway Mainline Level of Service Definitions	42
10	Freeway Traffic Volumes (Existing and Future Peak Hour)	43
11	Project Freeway Impacts	44
12	Critical Movement Analysis Summary With Traffic Mitigating Measures	52

INTRODUCTION

The applicant, McDonnell Douglas Realty Company, plans to redevelop a 170-acre site located southwest of the San Diego Freeway and Harbor Freeway interchange in the City of Los Angeles. The proposed Harbor Gateway Center Master Plan project will be located on the parcel currently occupied by the McDonnell Douglas Aircraft Company. As shown on Figure 1, Site Vicinity Map, this site is bounded by 190th Street on the north, the Southern Pacific Railroad tracks paralleling Normandie Avenue on the east, industrial and residential properties on the south, and Western Avenue and industrial/vacant properties on the west.

As part of the environmental review process for the project, the applicant has retained Crain & Associates to assess the traffic impact of the proposed land development on the surrounding street and freeway system. This report represents the results of an analysis of existing conditions as well as projected traffic conditions after completion of the proposed project. As requested by the Los Angeles Department of Transportation, a detailed evaluation of existing and future peak hour traffic conditions has been completed at the forty-one study intersections listed below:

1. Hawthorne Boulevard and 190th Street
2. Crenshaw Boulevard and 182nd Street
3. Crenshaw Boulevard and San Diego Freeway southbound on/off-ramps
4. Crenshaw Boulevard and 190th Street
5. Crenshaw Boulevard and Del Amo Boulevard
6. San Diego Freeway northbound on/off-ramps and 182nd Street
7. Western Avenue and Artesia Boulevard
8. Western Avenue and 182nd Street

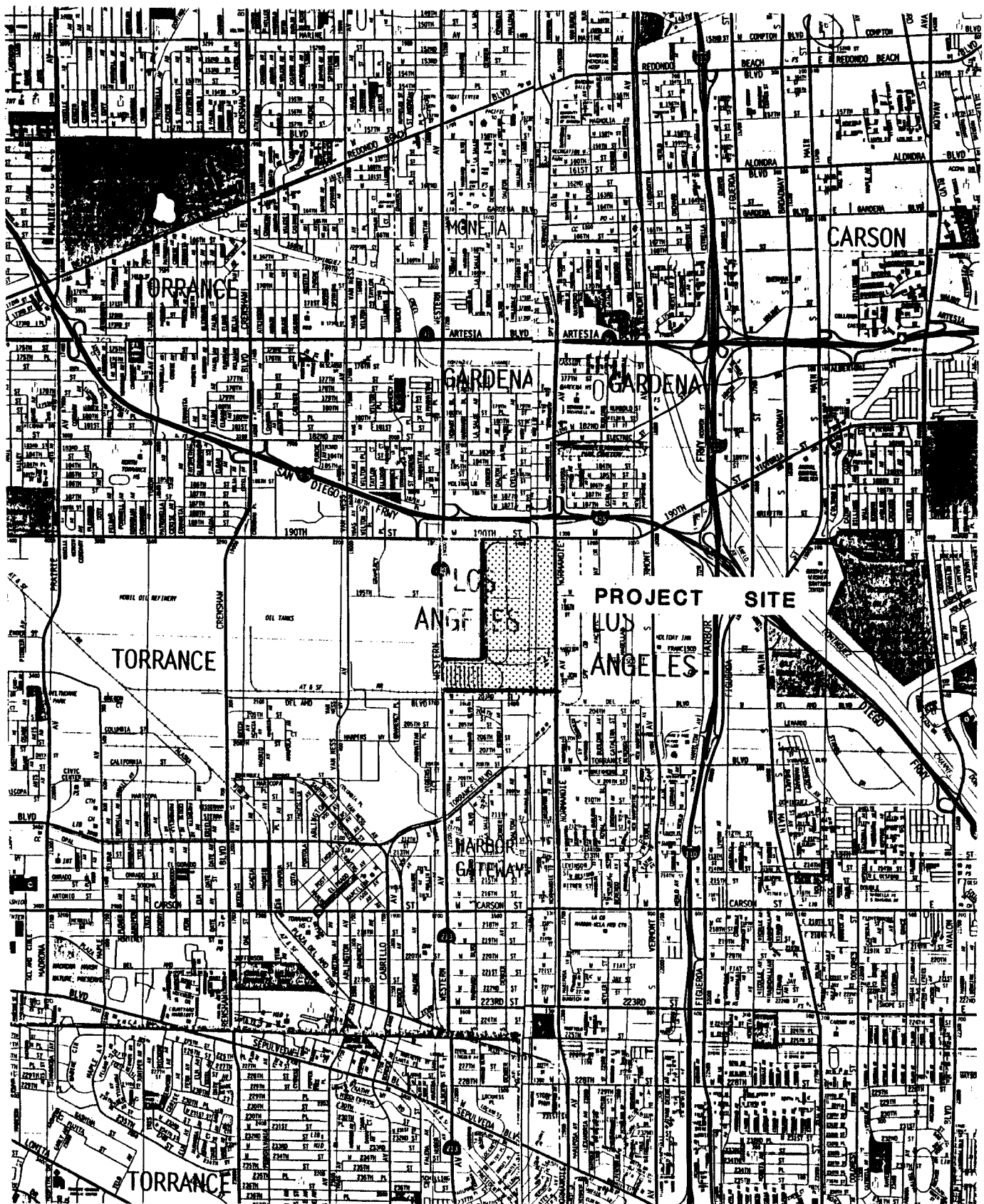


FIGURE 1

PROJECT VICINITY MAP



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9. Western Avenue and San Diego Freeway northbound on/off-ramps
10. San Diego Freeway southbound on/off-ramps
11. Western Avenue and 190th Street
12. Western Avenue and 195th Street
13. Western Avenue and Project Driveway
14. Western Avenue and Del Amo Boulevard
15. Western Avenue and Torrance Boulevard
16. Western Avenue and Carson Street
17. Western Avenue and Sepulveda Boulevard
18. Western Avenue and Pacific Coast Highway
19. Project Driveway and 190th Street
20. Artesia Boulevard and Normandie Avenue
21. Normandie Avenue and 182nd Street
22. Normandie Avenue and San Diego Freeway northbound on/off-ramps
23. San Diego Freeway off-ramp and 190th Street
24. Normandie Avenue and 190th Street
25. Normandie Avenue and Project Driveway/Francisco
26. Normandie Avenue and Torrance Boulevard
27. Normandie Avenue and Carson Street
28. Normandie Avenue and Sepulveda Boulevard
29. Normandie Avenue and Pacific Coast Highway
30. Vermont Avenue and Artesia Boulevard
31. Vermont Avenue and 190th Street
32. Vermont Avenue and Torrance Boulevard
33. Vermont Avenue and Carson Street
34. Harbor Freeway southbound off-ramp and 190th Street
35. Harbor Freeway northbound on-ramp and 190th Street

- 36. Figueroa Street and 190th Street
- 37. Hamilton Avenue and Harbor Freeway southbound on/off-ramps
- 38. Figueroa Street and Harbor Freeway northbound on/off-ramps
- 39. Hamilton Avenue and Torrance Boulevard
- 40. Figueroa Street and Torrance Boulevard
- 41. Harbor Freeway southbound on/off-ramps and Carson Street

These study intersections are within the area near the project site and are the locations most likely to be directly impacted by the project's traffic generation.

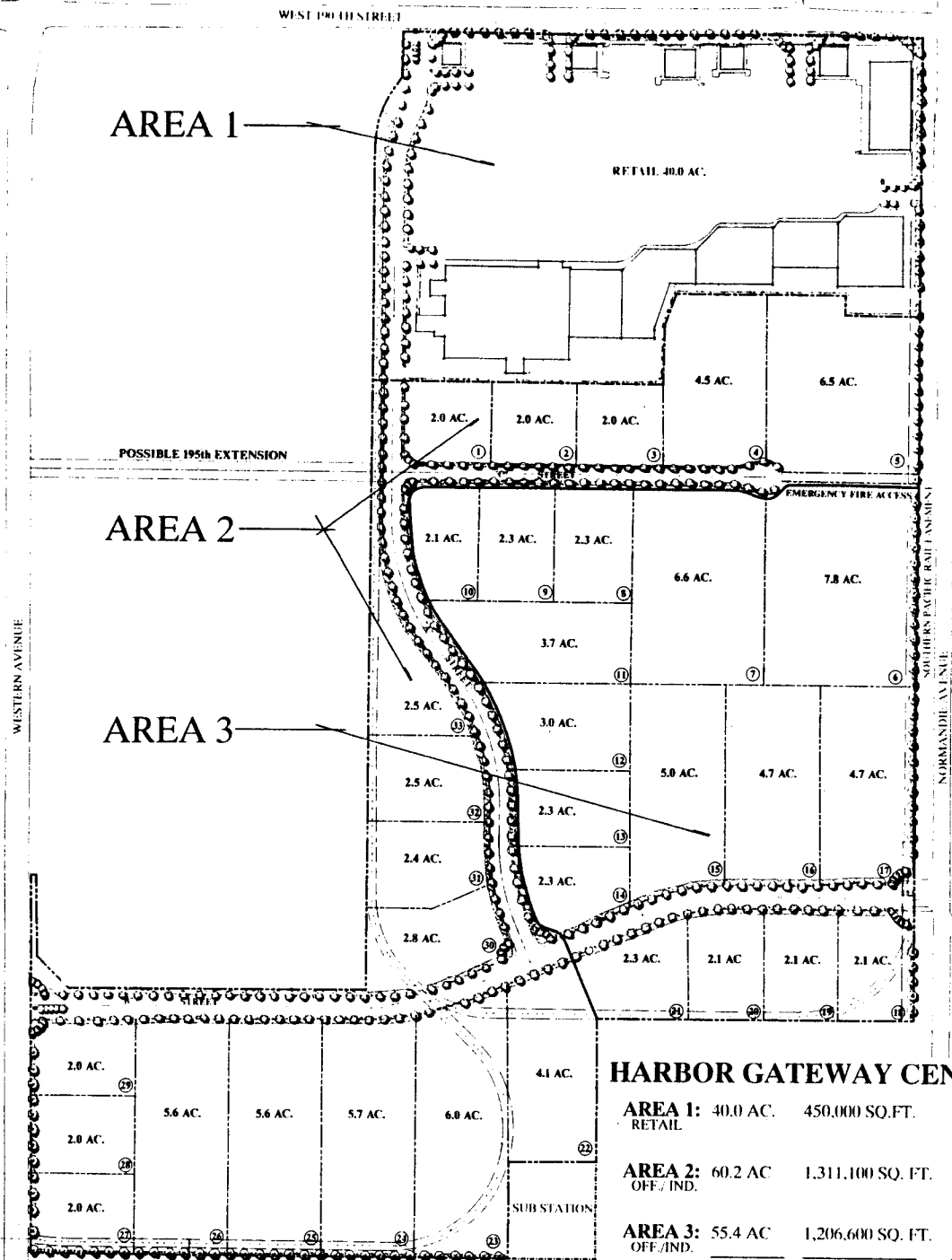
PROJECT DESCRIPTION

The project under consideration is the development of 170 acres southwest of the intersection of the San Diego Freeway and Harbor Freeway. The multi-use development plan consists of a 450,000 square foot shopping center and a 128.1 gross acre industrial/office park. Development in the industrial/office park could consist of up to 2,010,700 square feet of industrial park uses and up to 507,000 square feet of office park uses. The shopping center has been assumed to include up to 10,000 square feet of quality restaurant, 10,000 square feet of high-turnover restaurant, 10,000 square feet of fast-food restaurant and 4,000 theater seats.

The site is currently occupied by a complex of industrial buildings totaling 2,419,000 square feet. These buildings are occupied by the McDonnell Douglas Aircraft Company. Until recently, the buildings were used for aircraft manufacturing and assembly, with approximately 5,500 employees working at the site. Currently, the buildings are used as a warehousing and distribution facility. All existing buildings would be removed from the site as part of the project.

Access to the site will be provided from 190th Street, Normandie Avenue, and Western Avenue. As shown in Figure 2, an internal roadway system will intersect each of these roadways. Additionally, access via an extension of 195th Street across the adjacent vacant site to the west, formerly used by Lockheed Aircraft, could be provided as part of the redevelopment of that site. Individual industrial and office parcels will, in general, receive all access from this internal roadway system. The exception is three parcels in the southwest corner of the site which will receive direct access from Western Avenue.

In addition to driveways to be located along the main north-south internal roadway, the project's shopping center would receive direct access from 190th Street and



HARBOR GATEWAY CENTER

AREA 1: 40.0 AC. 450,000 SQ. FT. 2.1 ROAD AC.
RETAIL

AREA 2: 60.2 AC 1,311,100 SQ. FT. 10.3 ROAD AC.
OFF./IND.

AREA 3: 55.4 AC 1,206,600 SQ. FT. 2.2 ROAD AC.
OFF./IND.

TOTAL 155.6 AC. 2,967,700 SQ. FT. 14.6 ROAD AC.

GROSS ACRES 170.2

EXISTING DEVELOPMENT 2,419,000 SQ. FT.
TO BE DEMOLISHED

NET NEW DEVELOPMENT 548,700 SQ. FT.

CONCEPT MAP

Harbor Gateway Center
McDonnell Douglas Realty Co.

FIGURE 2



3/11/96

PROJECT SITE PLAN



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Normandie Avenue. The 190th Street driveways would include a major driveway located opposite the southbound San Diego Freeway off-ramp. The Normandie Avenue access would be provided via up to two crossings of the Southern Pacific Railroad tracks.

ENVIRONMENTAL SETTING

As described previously, the site of the Harbor Gateway Shopping Center and Industrial Office/Park is situated in the Torrance-Gardena Corridor District of the City of Los Angeles. This area is served by three regional freeway facilities: the San Diego Freeway, the Harbor Freeway and the Artesia Freeway. This area once contained heavy industrial and oil refining facilities with surrounding, interspersed residential and agricultural areas. In recent years, new development in this area has been generally of the commercial office, office park and industrial park types. Some of this development (such as TRW) is oriented toward the remaining aerospace industry located in Torrance, Redondo Beach, and El Segundo. Other developments (such as offices for the Toyota and Nissan auto import/distribution companies) are oriented toward the Los Angeles-Long Beach Harbor facilities. This area is also well-served by other modes of transportation. Aside from the existing surface streets and freeway systems with good transit services, the harbor facilities, Los Angeles International Airport and several major rail facilities are located nearby.

The existing regional freeway system provides excellent access to this site. The project site is conveniently linked with Los Angeles International Airport (approximately 6 miles to the northwest) via the San Diego Freeway, and with Downtown Los Angeles (approximately 15 miles to the north) via the Harbor Freeway. San Pedro and the Los Angeles Harbor, approximately 7 miles to the south, are also conveniently accessible via the Harbor Freeway. Direct ramp access for the San Diego Freeway is provided by the Western Avenue and Normandie Avenue interchanges. Direct access to the Artesia and Harbor Freeways is provided via Artesia Boulevard to the north, 190th Street to the east and Torrance Boulevard to the south.

Streets and Highways

Two of the most important east-west highway facilities serving the project site and surrounding areas are 190th Street and Artesia Boulevard. Both streets are designated as major highways. 182nd Street is an important secondary arterial located approximately midway between 190th Street and Artesia Boulevard. Other important east-west arterials in this area are Torrance Boulevard and Carson Street, both to the south of the project site.

In the project vicinity, 190th Street is generally 85 feet wide. 190th Street operates as a four-lane arterial with left-turn channelization provided at all intersections. Double left-turn lanes have been provided on the eastbound approach at Western Avenue, and right-turn-only lanes have been installed where the demand is high and where there is sufficient room to accommodate the additional lane. During the morning and afternoon peak traffic periods, parking prohibitions are utilized so that 190th Street from west of Western Avenue to east of the Harbor Freeway operates as a six-lane facility, in order to more effectively handle the heavier peak traffic demands. The southbound San Diego Freeway off-ramp intersects 190th Street opposite the project site. This ramp, where it intersects with 190th Street, is 36 feet wide, providing for a two-lane approach, with one left-turn-only lane and one right-turn-only lane. This approach is presently controlled by a STOP sign.

Artesia Boulevard, from Normandie Avenue to just west of Western Avenue, is a six-lane highway which becomes a four-lane facility to the west. A typical cross-section of this highway includes two (divided) 35-foot roadways with a 14-foot wide raised median which provides for left-turn channelization at all intersections. Artesia Boulevard transitions directly into the Artesia Freeway immediately east of Vermont Avenue.

Del Amo Boulevard to the west of Western Avenue is 71 feet wide, and to the east is designated as 203rd Street and is 32 feet wide. This street operates as a two-lane facility in each direction with left-turn channelization provided at major intersections. The roadway is discontinuous throughout the area to the east of Western Avenue.

Torrance Boulevard is a four-lane highway west of the Harbor Freeway and becomes a two-lane facility and ends to the east of Main Street. Left-turn channelization is provided at all intersections. A typical cross-section of this highway to the west of the Harbor Freeway is 60 feet in width.

Two of the most prominent north-south highway facilities in the study area are Western Avenue and Vermont Avenue. Both of these arterials have been designated Major Highways on the City's General Plan. Other important north-south routes in this area include Crenshaw Boulevard to the west and Figueroa Street and Normandie Avenue to the east.

Western Avenue presently operates as a four-lane facility throughout this area, although localized improvements at 190th Street have made it possible to provide three through lanes in each direction, along with double left-turn lanes for northbound traffic desiring to turn west onto 190th Street towards the southbound San Diego Freeway on-ramp. North of 190th Street, Western Avenue is 110 feet wide, but tapers to an 84-foot width further to the north. South of 190th Street, Western Avenue is 98 feet wide, and provides three travel lanes in each direction. Further to the south, Western Avenue provides two northbound and three southbound travel lanes.

Vermont Avenue, throughout the study area, is fully developed to a width of 80 feet, except along the east side in front of Ascot Park (between 182nd Street and the San Diego Freeway) where the shoulder area remains unimproved. This arterial provides for two lanes of traffic in each direction with left-turn channelization provided at all intersections. The on-ramp to the northbound San Diego Freeway is located along Vermont Avenue approximately 380 feet north of 190th Street. This ramp is 28 feet wide at Vermont Avenue, but narrows to a single lane before it merges with the freeway. As part of their ramp metering system, Caltrans presently meters this on-ramp during peak hours. Although the ramp queues are often substantial, they generally do not impact surface street traffic flow along Vermont Avenue.

Normandie Avenue presently operates as a four-lane facility throughout the study area, with left-turn channelization at intersections. Immediately north and south of 190th Street, Normandie Avenue is 72 feet wide but is narrower further to the south. A southbound on-ramp for the San Diego Freeway is provided just north of 190th Street on Normandie Avenue. Northbound on- and off-ramps to the San Diego Freeway are also provided further to the north.

Existing Traffic Volumes

Traffic volume count data was obtained from the City of Los Angeles and Caltrans. New counts were conducted by Crain & Associates at all study locations where recent counts were not available. The counts were used to determine the existing traffic and turning movement volumes at each of the study locations during the AM and PM peak periods. The AM peak hour traffic volumes at the study intersections are summarized in Figure 3(a) for 1996 conditions. The corresponding PM peak hour volumes are shown in Figure 3(b).

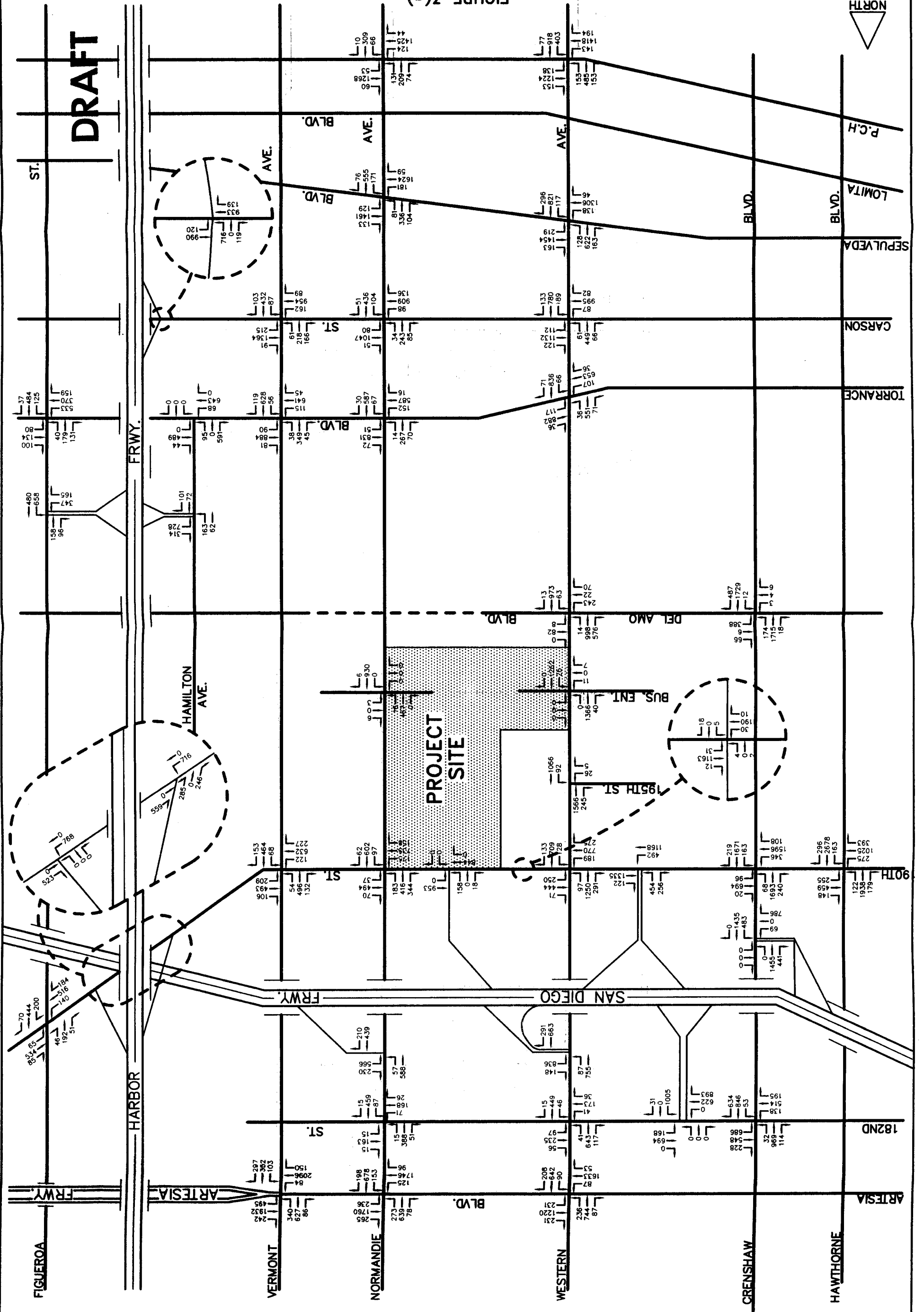


EXISTING (1996) TRAFFIC VOLUMES
AM PEAK HOUR

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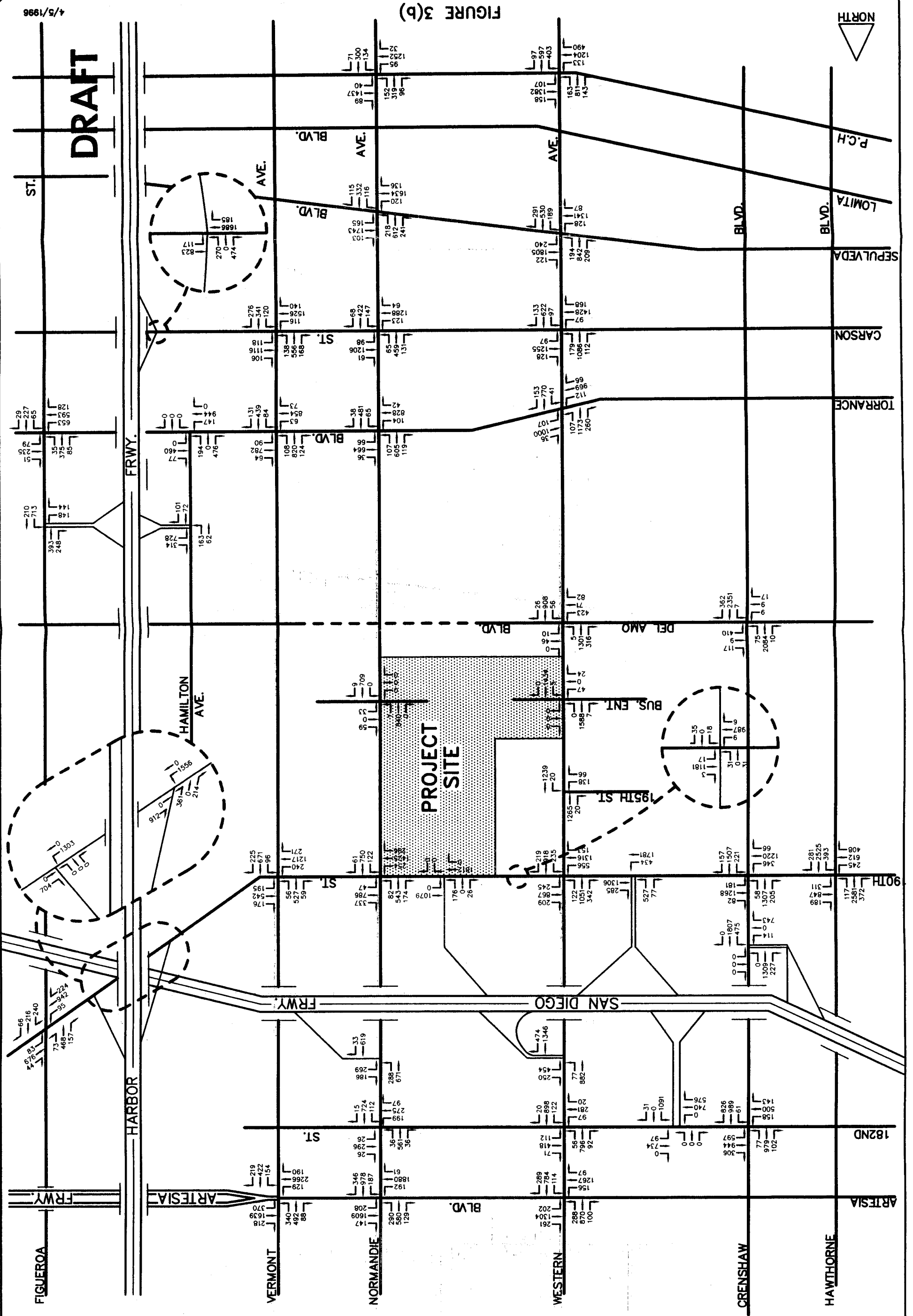
4/5/1996

FIGURE 3(a)



EXISTING (1996) TRAFFIC VOLUMES
PM PEAK HOUR

FIGURE 3(b)



DRAFT



4/5/1996

FM: MCDONNELL/PM1996

Public Transportation

The site is served by two bus lines which are operated by Gardena Transit (Line 2) and Torrance Transit (Line 6). These bus lines operate along the roadways adjacent to the proposed project site. These and other connecting bus lines offer extensive access to adjacent South Bay communities and also provide convenient, direct access into Downtown Los Angeles.

The following bus lines operate adjacent to the proposed development:

Gardena Line 2. This "rectangular" route involves primarily north-south travel on Western Avenue, Normandie Avenue, and Vermont Avenue, between Pacific Coast Highway on the south and Imperial Highway on the north. Half-hour headways are typical in both directions during all hours of operation.

Torrance Line 6. This linear line provides service between the Del Amo Center and Torrance Civic Center to the southwest and Cal State Dominguez Hills and the Artesia Station of the Metro Blue Line to the east. In the vicinity of the project site it operates along 190th Street. It provides service on half-hour headways in both directions during peak periods on Mondays through Fridays. No midday, night or weekend service is provided.

The following bus lines also operate in the study area, although somewhat further away from the project site than would be considered within normal walking distance for transit access:

Torrance Line 1. This bus line provides service between the Del Amo Fashion Square regional shopping center in Torrance and Union Station in Downtown Los Angeles. This route crosses on Carson Street to Vermont Avenue, then

proceeds north to Gardena Boulevard and then north on Figueroa Street to where it enters the Harbor Freeway at El Segundo Boulevard. Buses exit the freeway at Martin Luther King, Jr. Boulevard and then traverse the Downtown Los Angeles area to the terminus at Union Station. Buses on this route operate on a typical headway of one hour, but service with half-hour headways is provided during peak commuter periods (6:00 - 9:00 AM and 3:00 - 6:00 PM). Access for the handicapped is provided on all of the buses operated on this line.

MTA Line 130. This line operates east-west between King Harbor in Redondo Beach and the Fullerton Park-and-Ride Lot at Orangethorpe Avenue and Magnolia Avenue. Intermediate portions of this route run primarily along Artesia Boulevard, but the route diverts south at Vermont Avenue, turning easterly at 190th Street. Daylight service is provided on typical headways of one hour, several days per week. Access for the handicapped is provided on all of these buses.

MTA Line 445. This line offers peak hour commuter service between San Pedro and Alpine Village (approximately one mile southeast of the project site), and Downtown Los Angeles. Most of this route runs along the Harbor Freeway but traverses Downtown on surface streets. Five buses each provide service Monday through Friday, into Downtown during the peak AM commuter period and outbound during the PM peak period.

The bus lines discussed above provide important service to the existing industrial and residential areas, and office facilities located near the proposed development.

Analysis of Existing Conditions

The traffic analysis was performed through use of established traffic engineering techniques. The traffic counts described earlier were utilized so as to reflect any recent changes in traffic demand patterns. Other data pertaining to intersection geometrics, transit stop locations, parking related curb restrictions, pedestrian facilities, and signal operations were obtained through field surveys of the study area street system.

The CMA methodology used for the analysis and evaluation of traffic conditions at each study intersection is based on procedures outlined in Circular Number 212 of the Transportation Research Board¹. In the discussion of the CMA method for signalized intersections, procedures have been developed for grading the operational quality of an intersection in terms of the "Level of Service" (LOS) which describes different traffic flow characteristics. LOS A to C operate quite well. LOS D typically is the level for which a metropolitan area street system is designed. LOS E represents volumes at or near the capacity of the street which might result in stoppages of momentary duration and fairly unstable flow. LOS F occurs when a facility is overloaded and is characterized by stop-and-go traffic with stoppages of long duration.

A determination of the LOS at an intersection, where traffic volumes are known or have been projected, can be obtained through a summation of the critical movement volumes: the highest combination of conflicting movements which must be accommodated at that intersection. Once the sum of critical movement volumes has been obtained, the values in Table 1 can be used to determine the applicable LOS.

¹ Interim Materials on Highway Capacity, Circular Number 212, Transportation Research Board, Washington, D. C., 1980.

Table 1
Critical Movement Volume Ranges*
For Determining Levels of Service

Level of Service	Maximum Sum of Critical Volumes (VPH)		
	<u>Two Phase</u>	<u>Three Phase</u>	<u>Four or More Phases</u>
A	900	855	825
B	1,050	1,000	965
C	1,200	1,140	1,100
D	1,350	1,275	1,225
E	1,500	1,425	1,375
F	-----Not Applicable-----		

* For planning applications only, i.e., not appropriate for operations and design applications. Also, a computerized traffic signal coordination systems, such as the Automated Traffic Surveillance and Control (ATSAC), increase these values by approximately seven percent.

"Capacity" represents the maximum volume of vehicles in the critical lanes which has a reasonable expectation of passing through an intersection in one hour, under prevailing roadway and traffic conditions. For planning purposes, capacity equates to the maximum value of LOS E, as indicated in Table 1. The CMA values used in this study were calculated by dividing the sum of critical movement volumes by the appropriate capacity value for the type of signal control present or proposed at the study intersections. The Level of Service values are defined as a range of CMA values and shown in Table 2.

Table 3 (cont.)
Critical Movement Analysis Summary
Existing Traffic Conditions

	<u>Intersection</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
		<u>CMA</u>	<u>LOS</u>	<u>CMA</u>	<u>LOS</u>
22.	Normandie Ave. and San Diego Fwy. N/B on/off-ramps	0.519	A	0.516	A
23.	San Diego Fwy. S/B off-ramp and 190th St.	0.470	A	0.587	A
24.	Normandie Ave. and 190th St.	0.585	A	0.744	C
25.	Normandie Ave. and Project Dwy./ Francisco St.	0.329	A	0.305	A
26.	Normandie Ave. and Torrance Blvd.	0.617	B	0.619	B
27.	Normandie Ave. and Carson St.	0.617	B	0.811	D
28.	Normandie Ave. and Sepulveda Blvd.	0.708	C	0.770	C
29.	Normandie Ave. and Pacific Coast Hwy.	0.502	A	0.561	A
30.	Vermont Ave. and Artesia Blvd.	0.954	E	0.961	E
31.	Vermont Ave. and 190th St.	0.743	C	1.049	F
32.	Vermont Ave. and Torrance Blvd.	0.673	B	0.740	C
33.	Vermont Ave. and Carson St.	0.782	C	0.909	E
34.	Harbor Fwy. S/B off-ramp and 190th St.	0.429	A	0.759	C
35.	Harbor Fwy. N/B on-ramp and 190th St.	0.375	A	0.754	C
36.	Figuerroa St. and 190th St.	0.515	A	0.737	C
37.	Hamilton Ave. and Harbor Fwy. S/B on/off-ramps	0.504	A	0.504	A
38.	Figuerroa St. and Harbor Fwy. N/B on/off-ramps	0.594	B	0.786	C
39.	Hamilton Ave. and Torrance Blvd.	0.743	C	0.673	B
40.	Figuerroa St. and Torrance Blvd.	0.667	B	0.768	C
41.	Harbor Fwy. S/B on/off-ramps and Carson St.	0.850	D	0.738	C

PROJECT TRAFFIC

The following section contains information describing the vehicular trip generating characteristics of the proposed project. It also presents the methodology used to estimate the trip generation, distribution and assignment of the project traffic.

Traffic Generation

Traffic-generating characteristics of the land uses similar to the proposed project have been surveyed and documented by the Institute of Transportation Engineers (ITE). Those studies have indicated that land uses of the size associated with the proposed project generally exhibit the following trip-making characteristics.

Table 4
Project Trip Generation Formulas

Shopping Center - (per 1,000 sq. ft.)

Daily: $\ln(T) = 0.625 \ln(A) + 5.985$
AM Peak Hour: $\ln(T) = 0.589 \ln(A) + 2.378$; I/B = 63%, O/B = 37%
PM Peak Hour: $\ln(T) = 0.637 \ln(A) + 3.553$; I/B = 50%, O/B = 50%

Restaurant (Quality) - (per 1,000 sq. ft.)

Daily: $\ln(T) = 0.900 \ln(A) + 4.746$
AM Peak Hour: $T = 0.87(A)$; I/B = 63%, O/B = 37%
PM Peak Hour: $T = 7.39(A)$; I/B = 67%, O/B = 33%

Restaurant (High-Turnover) - (per 1,000 sq. ft.)

Daily: $T = 177.87(A)$
AM Peak Hour: $T = 14.81(A)$; I/B = 51%, O/B = 49%
PM Peak Hour: $T = 12.92(A)$; I/B = 56%, O/B = 44%

Restaurant (Fast-Food) - (per 1,000 sq. ft.)

Daily: $T = 710.08(A)$
AM Peak Hour: $T = 55.87(A)$; I/B = 51%, O/B = 49%
PM Peak Hour: $T = 36.56(A)$; I/B = 52%, O/B = 48%

Movie Theater - (per seat)

Daily: $T = 0.48(A)$
AM Peak Hour: $T = 0.03(A)$; I/B = 63%, O/B = 37%
PM Peak Hour: $T = 0.06(A)$; I/B = 64%, O/B = 36%

Table 4 (cont.)
Project Trip Generation Formulas

Industrial Park - (per 1,000 sq. ft.)

Daily: $T = 4.949 \ln(A) + 765.587$
 AM Peak Hour: $\ln(T) = 0.818 \ln(A) + 0.916$; I/B = 82%, O/B = 18%
 PM Peak Hour: $T = [(1.027/A) + 0.00064]^{-1}$; I/B = 21%, O/B = 79%

Office Park - (per 1,000 sq. ft.)

Daily: $T = 0.835 \ln(A) + 3.435$
 AM Peak Hour: $T = 0.818 \ln(A) + 1.679$; I/B = 89%, O/B = 11%
 PM Peak Hour: $T = 0.825 \ln(A) + 1.418$; I/B = 15%, O/B = 85%

Warehouse/Distribution Center - (per 1,000 sq. ft.)

Daily: $T = 3.68(A) + 342.65$
 AM Peak Hour: $T = 0.382 (A) + 79.314$; I/B = 72%, O/B = 28%
 PM Peak Hour: $T = 0.488 (A) + 74.974$; I/B = 35%, O/B = 65%

Accordingly, on the basis of the traffic generation formulas in Table 4, the projected amount of new traffic volume that could be generated by the proposed mixed-use project is shown in Table 5. Appendix A separates this generation by project phase. It should be noted that Table 5 and Appendix A contain standard internal trip generation and pass-by trip adjustments. These reflect that many of the trips to and from the site will utilize more than one facility and/or will be made as part of a larger trip which would have traveled past whether or not the center was present.

Trip Distribution

The next step in the process was the determination of the geographic distribution of project trips. A primary factor affecting trip direction is the relative distribution of the housing from which employees of the proposed business/industrial park and patrons of the shopping center would be drawn. Each trip to and from the project site will be linked to another site somewhere in the region. These trip linkages are analyzed by the City of Los Angeles Framework computerized traffic model. This model considers the land-use patterns throughout the Southern California area to

Table 5

Project Traffic Generation

Land Use Category	Size (Sq. Ft.)	Daily Traffic	AM Peak Hour		PM Peak Hour	
			In	Out	In	Out
Shopping Center Gross Generation						
Retail	355,000	13,840	196	115	656	656
Restaurant - Quality	10,000	910	6	3	50	24
Restaurant - High Turnover	10,000	1,780	75	73	72	57
Restaurant - Fast Food	10,000	7,100	285	274	190	176
Theater - 4,000 seats	65,000	1,930	76	44	154	86
Subtotal	450,000	25,560	638	509	1,122	999
Less Shopping Center Internal/Pass-By Trips						
Retail (0%/20%)		(2,770)	(39)	(23)	(131)	(131)
Restaurant - Quality (20%/10%)		(270)	(2)	(1)	(15)	(7)
Restaurant - High Turnover (20%/20%)		(710)	(30)	(29)	(29)	(23)
Restaurant - Fast Food (20%/50%)		(4,970)	(200)	(192)	(133)	(123)
Theater (10%/10%)		(390)	(15)	(9)	(31)	(17)
Subtotal		(9,110)	(286)	(254)	(339)	(301)
Net Shopping Center Generation		16,450	352	255	783	698
				607		1,481

Table 5 (cont.)

Project Traffic Generation

<u>Land Use Category</u>	<u>Size (Sq. Ft.)</u>	<u>Daily Traffic</u>	<u>AM Peak Hour</u>		<u>PM Peak Hour</u>	
			<u>In</u>	<u>Out</u>	<u>In</u>	<u>Out</u>
Shopping Center	450,000	16,450	352	255	783	698
Office Park	507,000	5,630	779	96	106	598
Industrial Park	2,010,700	10,720	1,105	150	131	741
Site Generation	2,967,700	32,800	2,236	501	1,020	2,037
Less Existing Site Generation Warehouse	(2,419,000)	(8,560)	(608)	(237)	(387)	(718)
Net Site Generation	548,700	24,240	1,628	264	633	1,319
						1,952

estimate current trip-making patterns. It also considers future land-use growth patterns to determine how trip linkages and travel patterns may change over time, due to shifts in the housing and/or employment base locations. In particular, the model considers the amount of housing and employment growth or decline within each subarea comprising the modeled area to determine changes in the distance each area's residents must travel to find adequate employment opportunities.

The estimated directional trip distribution resulting from this analysis is shown in Table 6.

Table 6
Directional Regional Trip Distribution

<u>Direction</u>	<u>Percentage of Trips</u>
North	30%
South	30
East	25
West	<u>15</u>
	100%

Traffic Assignment

The City of Los Angeles Framework computerized traffic model was utilized to assign project-related traffic to individual roadways within the study area. In doing so, the model accounted for the level of congestion on each roadway and determined which travel path produced the shortest travel time for each trip. The results of this computerized assignment were carefully examined for "reasonableness", but no adjustments were considered necessary to reflect likely travel paths. It should be noted that the computer model assumes drivers will follow the most direct, rational path. The direct path methodology has been shown to produce the most reliable overall traffic projections. Further, this procedure concentrates traffic volumes and any necessary roadway improvements on the preferred (Major) routes, rather than

encouraging the use of minor routes. The results of the computerized traffic assignment provides the necessary level of detail to conduct the traffic analysis.

Parking and Access

Parking lots/structures supporting the individual uses will be constructed as build out of the multi-use development is completed. All parcels will be provided sufficient parking to meet code requirements within that parcel. For the shopping center, this may include consideration of shared parking between the theater, restaurant and retail uses.

Access to the site will be provided from 190th Street, Normandie Avenue, and Western Avenue. As shown in Figure 2, an internal roadway system will intersect each of these roadways. Additionally, access via an extension of 195th Street across the adjacent vacant site to the west, formerly used by Lockheed Aircraft, could be provided as part of the redevelopment of that site.

Individual industrial and office parcels will, in general, receive all access from this internal roadway system. As an exception, up to three industrial/office parcels could also receive direct access from the surrounding street system. These parcels are located in the southwest corner of the project and would receive direct access from Western Avenue.

The project's shopping center would receive direct access from 190th Street and Normandie Avenue in addition to driveways to be located along the main north-south internal roadway. The 190th Street driveways would include a major driveway located opposite the southbound San Diego Freeway off-ramp. The Normandie Avenue access would be provided via up to two crossings of the Southern Pacific Railroad tracks.

In addition to the shopping center driveways, two other railroad crossings would be used to access the project site. One would be an emergency-only access roadway opposite Knox Street. The other would be an upgrade of the existing driveway accessing the site opposite Francisco Street. Since the Southern Pacific Railroad track involved in all of these crossings is a very lightly used rail line, these crossings are considered appropriate.

The intersections of the major project access roads and driveways with the public street system would be signalized. A total of five locations are proposed to be signalized, including:

- o Western Avenue and Project Roadway (existing signal)
- o 190th Street and Project Roadway (relocated signal)
- o 190th Street and San Diego Freeway Southbound Off-Ramp/Shopping Center Drive (new signal)
- o Normandie Avenue and Shopping Center Driveway (new railroad crossing/signal)
- o Normandie Avenue and Project Roadway/Francisco Street (existing signal)

Of these, two have existing signals, one will have a relocated existing signal and a fourth is at the intersection of a freeway ramp and a major highway. The final signal is needed to allow a full four-way driveway across the railroad tracks paralleling Normandie Avenue. Thus, all five signals are considered necessary.

FUTURE TRAFFIC CONDITIONS

There are a number of other projects either under construction or planned for development which will add new traffic volumes to the study area. For this reason, the analysis of future traffic conditions has been expanded to include potential traffic volumes expected to be generated by projects that have not yet been developed but are planned within the study area in the near future.

The transportation network used in the model to project future traffic conditions was based on the City of Los Angeles Framework traffic forecasting model, which was developed using the regional model developed by the Southern California Association of Governments (SCAG) and the Los Angeles Regional Transportation Study (LARTS) section of Caltrans. The SCAG/LARTS model is the primary long-range transportation planning tool for the Los Angeles region. Of particular relevance, this model includes provisions of an expanded High-Occupancy Vehicle (HOV) lane network, such as the recently completed or currently under construction HOV lanes on the Harbor, San Diego, Ventura, Hollywood and Simi Valley Freeways, as well as those programmed for the Antelope Valley Freeway. This model also considers the impacts of the expanding transit network, including extension of the Metro Blue-Line. However, it does not include other improvements considered less assured. Examples include trip reduction measures required by the South Coast Air Quality Management District (SCAQMD) and the Los Angeles County Congestion Management Program (CMP).

While the Framework model provides an overall view of the transportation patterns and characteristics within the Los Angeles area, its emphasis on subregional planning does not provide the level of detail necessary to forecast individual turning movements at specific intersections with acceptable precision. As part of this study,

the roadway network contained within the Framework model was refined to better reflect the capacities and constraints of the transportation system within the study area, specifically the study intersections and freeway interchanges.

Related Projects/Cumulative Growth

The SCAG regional and the City of Los Angeles land use data were augmented by a search for specific development projects within the study area, which are on file with the Cities of Los Angeles, Torrance, Carson and Gardena. These "related projects" included projects which are completed but not fully occupied, are currently under construction or beginning construction, or are presently only proposed but which could become operational within the time frame examined in this study.

From a review of these lists, it was determined that traffic from thirty-seven projects near the study site would produce additional traffic at the study intersections. These related projects are listed and described in Table 7. The locations of these related projects are shown in Figure 4.

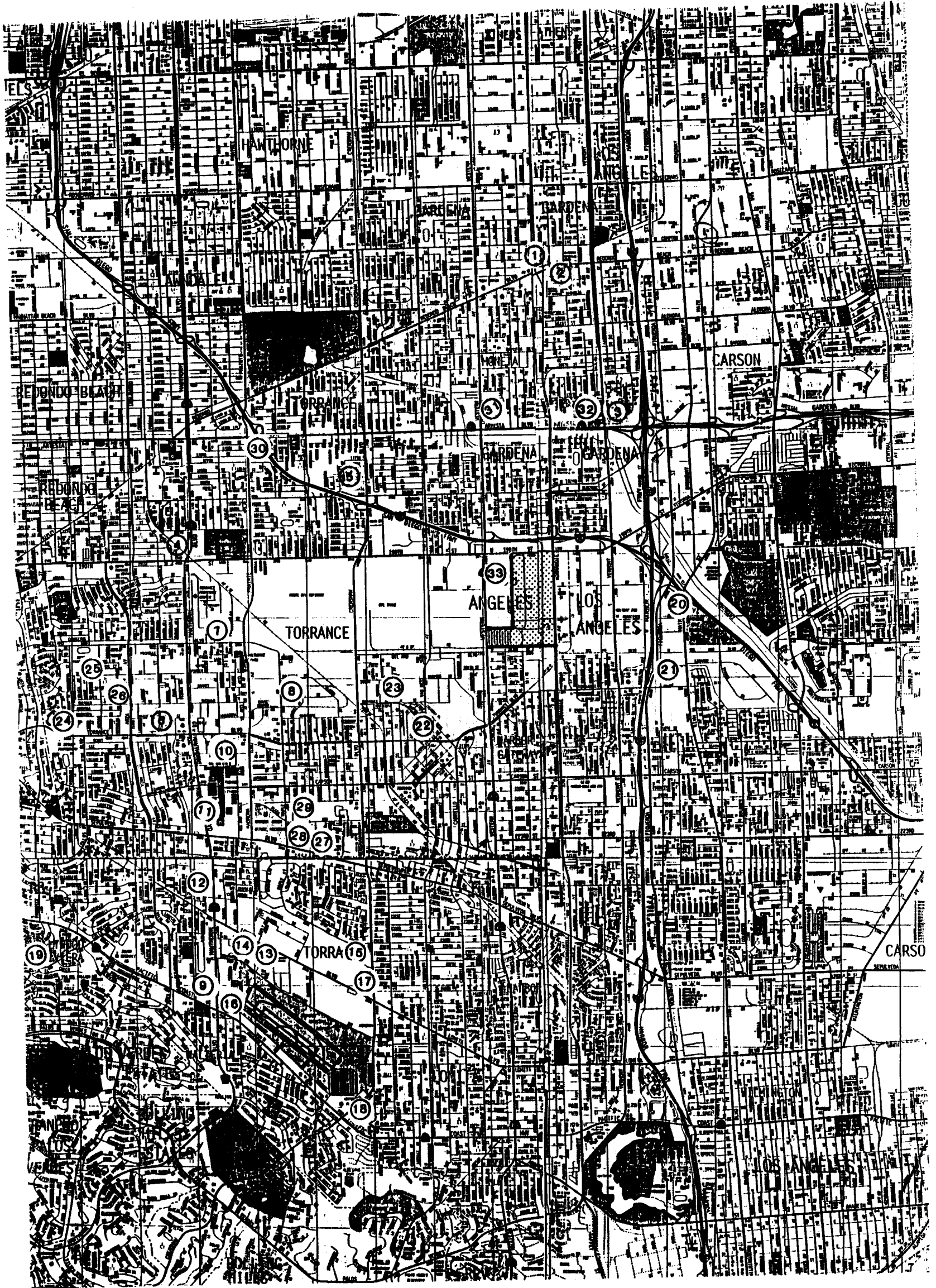
To determine the 2006 "null" or non-project traffic conditions, the greater of the trip generation for each zone, based on a comparison of the City of Los Angeles land-use growth projections data, and the sum of the new related projects proposed for each zone, was used as the incremental growth for that zone. The resulting 2006 AM and PM peak hour traffic volume estimates are shown in Figures 5(a) and (b), respectively. These estimates form the basis for determining project traffic impacts on the street system. Future (2010) AM and PM peak hour traffic volumes with the proposed project traffic are shown in Figures 6(a) and (b), respectively.

**Table 7
Related Projects List**

<u>Project No.</u>	<u>Description</u>	<u>Reference No.</u>	<u>Location</u>
1.	25,000 s.f. Church		1251 W. Redondo Beach Blvd.
2.	Expansion from 8,030 s.f. to 37,000 s.f. of Office		1116 W. Redondo Beach Blvd.
3.	54,000 s.f. Supermarket		NEC Western Ave. & Artesia Blvd.
4.	195-Unit Senior Housing and Recreation Bldg.	CUP 94-0001	4502 186th St.
5.	McDonald's Restaurant	CUP 95-0013	18145 Crenshaw Blvd.
6.	135,000 s.f. Hospital Addition	CUP 94-0005	4101 Torrance Blvd.
7.	44,326 Office/Warehouse	CUP 94-0035	3500 Challenger St.
8.	8,000 s.f. Retail	CUP 94-0025	540 Maple Ave.
9.	72-Unit Senior Citizen Condominiums	CUP 93-0005	23860 Los Codona Ave.
10.	46,000 s.f. Office	CUP 90-32	SEC Arnie Ave. & Torrance Blvd.
11.	7,219 Restaurant	CUP 95-0016	21880 Hawthorne Blvd.
12.	33,898 Office		NWC Hawthorne Blvd. & 230th St.
13.	24,530 sf Hospital Expansion	CUP 76-90	3330 Lomita Blvd.
14.	60,000 s.f. Medical Office	PP 72-14	3400/3440 Lomita Blvd.
15.	36-Unit Senior Citizen Condominiums	CUP 93-0036	235th St. SS between Elm Ave. & Crenshaw Blvd.
16.	Fast-Food Restaurant	CUP 95-0015	3737 Pacific Coast Hwy.
17.	167,000 s.f. Storage Facility 6,175 s.f. Retail	CUP 96-0002	WS Crenshaw Blvd. N/O Lomita Blvd.
18.	Remodeling Shopping Center; Demolish 30,475 Retail/ Restaurant; Demolish 29,944 s.f. Health Club; Remove 15 Tennis Courts; Construct 16,700 Retail/ Restaurant; Addition of 14 Screens to an Existing 6-screen Theatre		Rolling Hills Plaza Shopping Center

Table 7
Related Projects List

<u>Project No.</u>	<u>Description</u>	<u>Reference No.</u>	<u>Location</u>
19.	28-Unit Single Family Homes	2C 91-2	220 Via Riviera
20.	640,000 s.f. Retail 159,000 Office 127,000 Light Industrial		Carson Towne Center
21.	1,870,000 s.f. Retail		Metro 2000 Outlet Center
22.	18-Unit Single Family Homes	CUP 94-0013	1425 Engracia
23.	20,400 s.f. Office/Warehouse	MOD 95-0006	NEC Madrid & Dominguez Wy.
24.	90-Unit Condominiums	CUP 88-62	5501 Torrance Blvd.
25.	54-Unit Condominiums	CUP 90-2	4921 Spencer St.
26.	11,094 s.f. Church	CUP 95-0026	4625 Garnet St.
27.	131-Unit Condominiums	PD 89-1	2801 Sepulveda Blvd.
28.	52-Unit Condominiums	PD 89-2	2801 Sepulveda Blvd.
29.	84-Unit Condominiums	ZC 90-1	2825 Plaza Del Amo
30.	14,200 s.f. Auto Service Center	CUP 94-0022	SEC Artesia Blvd. & Prairie Ave.
31.	190,000 s.f. Shopping Center		NEC Western Ave. & Artesia Blvd.
32.	3,245 s.f. Mini-Mart/Gas Station		NWC Vermont Blvd. & Artesia Blvd.
33.	755,000 s.f. Shopping Center 3,500 seat Theatre		SEC Western Ave. & 190th St.
34.	14,000 s.f. Fitness Center		
35.	16 Industrial/Warehouse Buildings		
36.	6-Unit Single Family Homes		
37.	44-Unit Townhomes		



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FIGURE 4

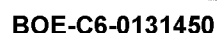
RELATED PROJECTS MAP



CRAIN & ASSOCIATES

2007 Sawtelle Boulevard
Los Angeles, California 90025
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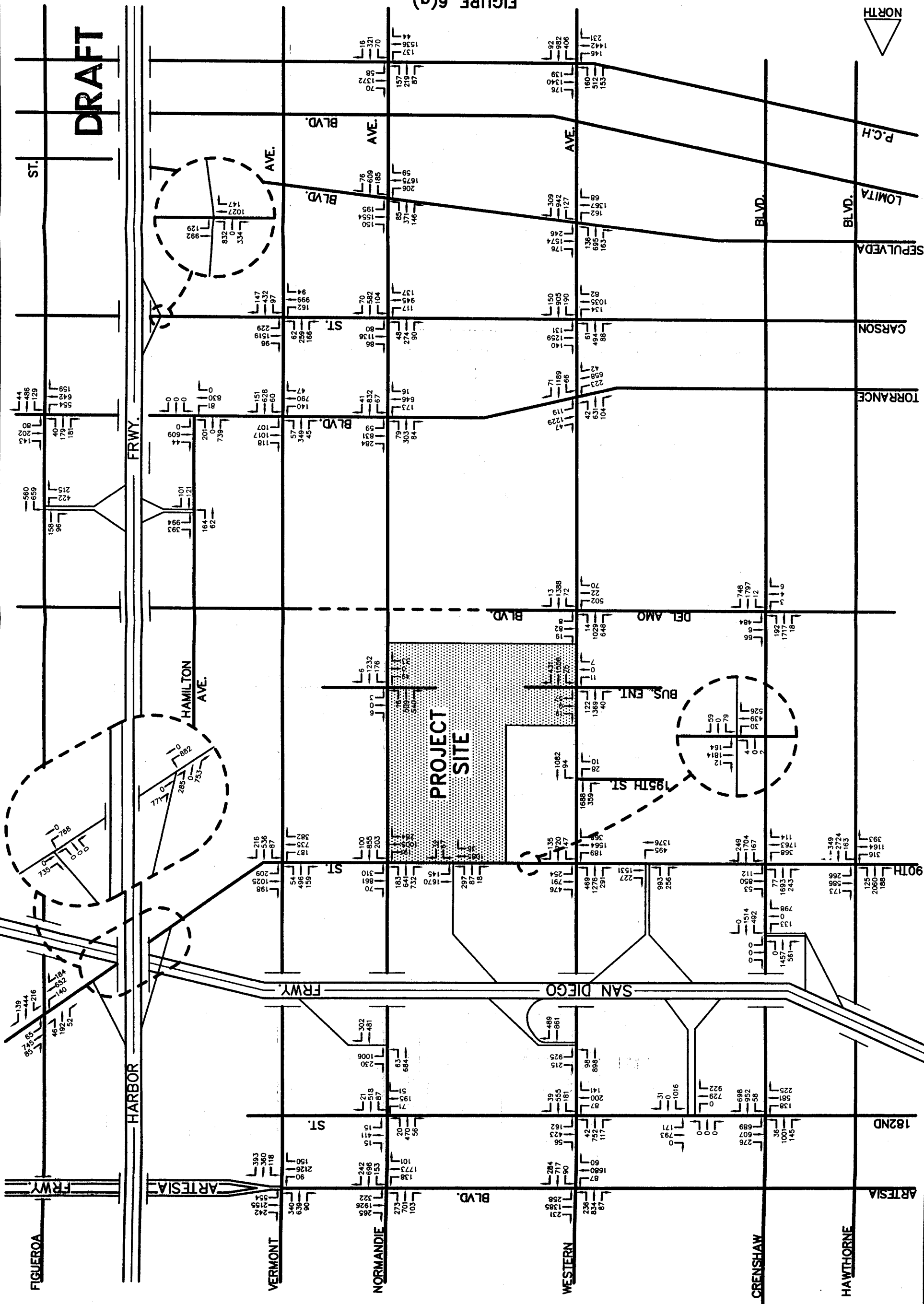
FUTURE (2006) TRAFFIC VOLUMES
WITH PROJECT
AM PEAK HOUR

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FN: MCDONNEL\AM2006WP

4/5/1996

FIGURE 6(a)



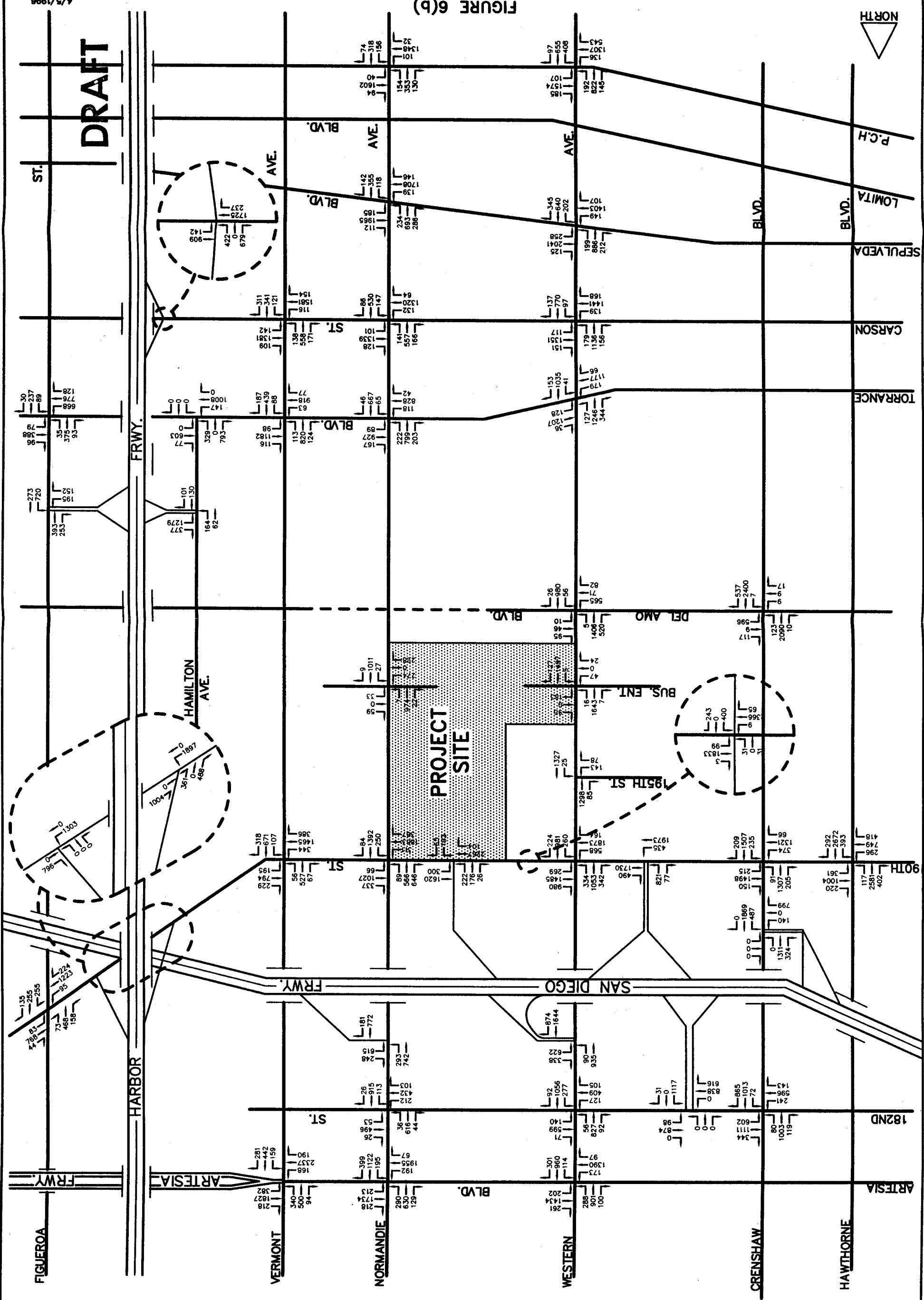


FUTURE (2006) TRAFFIC VOLUMES
WITH PROJECT
PM PEAK HOUR

4/5/1986

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FIGURE 6(b)



Analysis of Future Traffic Conditions (With and Without Project)

The analysis of future conditions in the study area was performed using the same Critical Movement Analysis procedures described previously in this report. The results of the Critical Movement Analysis for future traffic conditions at the study intersections are summarized in Table 8. The table shows that at a majority of the study intersections future traffic conditions will likely be at low levels of congestion with and without the proposed project.

As determined by LADOT, a "significant traffic impact" attributable to a project can occur within three ranges of CMA values as follows:

Criteria for Significant Traffic Impact

<u>Final CMA Value</u>	<u>Project-Related Increase in CMA Value</u>
0.700 - 8.00	equal to or greater than 0.040
0.800 - 0.900	equal to or greater than 0.020
0.900 or greater	equal to or greater than 0.010

As indicated in Table 8, the proposed project would have significant traffic impacts at thirty-one intersections during the morning and/or evening peak hours.

Table 8
Critical Movement Analysis Summary
Future (Year 2006) Traffic Conditions

No.	Intersection	Peak Period	Without Project		With Project Without Mitigation		
			CMA	LOS	CMA	LOS	IMPACT
1.	Hawthorne Blvd. and 190th St.	AM PM	1.065 1.239	F F	1.095 1.266	F F	+ 0.030* + 0.027*
2.	Crenshaw Blvd. and 182nd St.	AM PM	1.006 1.174	F F	1.010 1.182	F F	+ 0.004 + 0.008
3.	Crenshaw Blvd. and San Diego Fwy. S/B on/off-ramps	AM PM	1.043 0.957	F E	1.058 0.968	F E	+ 0.015* + 0.011*
4.	Crenshaw Blvd. and 190th St.	AM PM	1.279 1.313	F F	1.313 1.354	F F	+ 0.034* + 0.041*
5.	Crenshaw Blvd. and Del Amo Blvd.	AM PM	0.893 0.988	D E	0.935 1.025	E F	+ 0.042* + 0.037*
6.	San Diego Fwy. N/B on/off-ramps and 182nd St.	AM PM	0.944 0.928	E E	0.949 0.933	E E	+ 0.005 + 0.005
7.	Western Ave. and Artesia Blvd.	AM PM	1.025 1.073	F F	1.041 1.095	F F	+ 0.016* + 0.022*
8.	Western Ave. and 182nd St.	AM PM	0.585 0.758	A C	0.631 0.799	B C	+ 0.046 + 0.041*
9.	Western Ave. and San Diego Fwy. N/B on/off-ramps	AM PM	0.703 0.892	C D	0.732 0.928	C E	+ 0.029 + 0.036*
10.	San Diego Fwy. S/B on/off-ramps	AM PM	1.176 1.131	F F	1.323 1.227	F F	+ 0.147* + 0.096*
11.	Western Ave. and 190th St.	AM PM	0.822 1.171	D F	1.029 1.353	F F	+ 0.207* + 0.182*
12.	Western Ave. and 195th St.	AM PM	0.621 0.553	B A	0.651 0.569	B A	+ 0.030 + 0.016
13.	Western Ave. and Project Dwy.	AM PM	0.360 0.418	A A	0.587 0.552	A A	+ 0.227 + 0.134
14.	Western Ave. and Del Amo Blvd.	AM PM	0.839 0.872	D D	0.982 0.958	E E	+ 0.143 + 0.086
15.	Western Ave. and Torrance Blvd.	AM PM	1.002 1.055	F F	1.115 1.107	F F	+ 0.113* + 0.052*
16.	Western Ave. and Carson St.	AM PM	0.877 1.041	D F	0.949 1.057	E F	+ 0.072* + 0.016*

* Denotes significant impact

Table 8 (cont.)
Critical Movement Analysis Summary
Future (Year 2006) Traffic Conditions

No.	Intersection	Peak Period	Without Project		With Project Without Mitigation		
			CMA	LOS	CMA	LOS	IMPACT
17.	Western Ave. and Sepulveda Blvd.	AM PM	1.062 1.164	F F	1.096 1.180	F F	+ 0.034* + 0.016*
18.	Western Ave. and Pacific Coast Hwy.	AM PM	0.999 1.037	E F	1.014 1.041	F F	+ 0.015* + 0.004
19.	Project Dwy. and 190th St.	AM PM	0.623 0.849	B D	0.821 1.185	D F	+ 0.198* + 0.336*
20.	Artesia Blvd. and Normandie Ave.	AM PM	1.028 1.148	F F	1.038 1.169	F F	+ 0.010* + 0.021*
21.	Normandie Ave. and 182nd St.	AM PM	0.395 0.615	A B	0.423 0.653	A B	+ 0.028 + 0.038
22.	Normandie Ave. and San Diego Fwy. N/B on/off-ramps	AM PM	0.594 0.669	A B	0.715 0.801	C D	+ 0.121* + 0.132*
23.	San Diego Fwy. off-ramp and 190th St.	AM PM	0.756 0.749	C C	0.735 0.974	C E	- 0.021 + 0.225*
24.	Normandie Ave. and 190th St.	AM PM	0.756 0.835	C D	0.973 1.091	E F	+ 0.217* + 0.256*
25.	Normandie Ave. and Project Dwy./ Francisco St.	AM PM	0.411 0.373	A A	0.509 0.701	A C	+ 0.098 + 0.328*
26.	Normandie Ave. and Torrance Blvd.	AM PM	0.735 0.727	C C	0.831 0.829	D D	+ 0.096* + 0.102*
27.	Normandie Ave. and Carson St.	AM PM	0.696 0.865	B D	0.735 0.917	C E	+ 0.039 + 0.052*
28.	Normandie Ave. and Sepulveda Blvd.	AM PM	0.765 0.842	C D	0.773 0.851	C D	+ 0.008 + 0.009
29.	Normandie Ave. and Pacific Coast Hwy.	AM PM	0.555 0.631	A B	0.559 0.639	A B	+ 0.004 + 0.008
30.	Vermont Ave. and Artesia Blvd.	AM PM	1.015 0.969	F E	1.031 0.985	F E	+ 0.016* + 0.016*
31.	Vermont Ave. and 190th St.	AM PM	0.852 1.137	D F	0.894 1.215	D F	+ 0.042* + 0.078*
32.	Vermont Ave. and Torrance Blvd.	AM PM	0.730 0.831	C D	0.770 0.848	C D	+ 0.040* + 0.017

* Denotes significant impact

Table 8 (cont.)
Critical Movement Analysis Summary
Future Traffic Conditions

No.	Intersection	Peak Period	Without Project		With Project Without Mitigation		
			CMA	LOS	CMA	LOS	IMPACT
33.	Vermont Ave. and Carson St.	AM	0.847	D	0.849	D	+ 0.002
		PM	0.926	E	0.945	E	+ 0.019*
34.	Harbor Fwy. S/B off-ramp and 190th St.	AM	0.639	B	0.777	C	+ 0.138*
		PM	0.802	D	0.873	D	+ 0.071*
35.	Harbor Fwy. N/B on-ramp and 190th St.	AM	0.386	A	0.471	A	+ 0.085
		PM	0.771	C	0.828	D	+ 0.057*
36.	Figueroa St. and 190th St.	AM	0.525	A	0.595	A	+ 0.070
		PM	0.781	C	0.842	D	+ 0.061*
37.	Hamilton Ave. and Harbor Fwy. S/B on/off-ramps	AM	0.652	B	0.653	B	+ 0.001
		PM	0.747	C	0.748	C	+ 0.001
38.	Figueroa St. and Harbor Fwy. N/B on/off-ramps	AM	0.719	C	0.736	C	+ 0.017
		PM	0.807	D	0.811	D	+ 0.004
39.	Hamilton Ave. and Torrance Blvd.	AM	0.846	D	0.926	E	+ 0.080*
		PM	0.952	E	0.979	E	+ 0.027*
40.	Figueroa St. and Torrance Blvd.	AM	0.819	D	0.836	D	+ 0.017
		PM	0.869	D	0.916	E	+ 0.047*
41.	Harbor Fwy. S/B on/off-ramps and Carson St.	AM	0.947	E	0.949	E	+ 0.002
		PM	0.909	E	0.915	E	+ 0.006

* Denotes significant impact

IMPACTS ON REGIONAL TRANSPORTATION SYSTEM

To address the increasing public concern that traffic congestion was impacting the quality of life and economic vitality of the State of California, the Congestion Management Program (CMP) was enacted by Proposition 111. The intent of the CMP is to provide the analytical basis for transportation decisions through the State Transportation Improvement Program (STIP) process. A countywide approach has been established by the Metropolitan Transportation Authority, the Local CMP agency, to implement the statutory requirements of the CMP. The Countywide approach includes designating a highway network that includes all state highways and principal arterials within the County and monitoring the network's Level of Service standards. This monitoring of the CMP network is one of the responsibilities of local jurisdictions. If level of service standards deteriorate, then local jurisdictions must prepare a deficiency plan to be in conformance with the Countywide plan.

All development projects which are required to prepare an EIR are subject to the Land Use Analysis program of the CMP. This requirement is to provide decision-makers with the project-specific traffic impacts created by large projects on the CMP highway network. Traffic volumes attributable to the proposed project, as determined earlier, were analyzed as an incremental increase to the "without project" conditions. This methodology allowed for both an assessment of overall future freeway conditions and a determination of the project impacts to these regional transportation facilities.

In order to analyze the impact of the proposed project on the regional transportation system (i.e., the freeway network), the results of the computerized transportation model were again examined. Future year 2006 freeway volumes, including project traffic, were forecast in the same manner as for the surface street intersections.

The Level of Service values used for freeway segment analyses is estimated by calculating the demand-to-capacity (D/C) ratio and using the LOS definitions shown in Table 9. The peak hour volumes shown in Table 10 were compared to freeway capacities, based on 2,000 vehicles per hour per lane (VPHPL) and 1,500 VPHPL for HOV lanes, in order to determine the demand-to-capacity ratio (D/C) and corresponding Level of Service. The results of this comparison are shown in Table 11.

Table 9
Freeway Mainline Level of Service Definitions

<u>D/C Ratio</u>	<u>LOS</u>	<u>D/C Ratio</u>	<u>LOS*</u>
0.00 - 0.35	A	>1.00 - 1.25	F(0)
>0.35 - 0.54	B	>1.25 - 1.35	F(1)
>0.54 - 0.77	C	>1.35 - 1.45	F(2)
>0.77 - 0.93	D	>1.45	F(3)
>0.93 - 1.00	E		

* LOS F(1) through F(3) represent severe congestion (travel speeds less than 25 MPH) for more than one hour.

Source: Los Angeles County Metropolitan Transportation Authority, Congestion Management Program, 1993.

As Table 11 shows, the area freeway system will be heavily congested with or without the project. The project will add incrementally to these significant cumulative impacts. The project will have significant impacts at up to eight locations. These will be addressed by the overall Congestion Management Program (CMP) improvements, such as those included in the mitigation section of this report.

Table 10
Existing and Future
Peak Hour Freeway Traffic Volumes

CMP Station	Direction	Peak Hour	Existing Volume	Future	
				Without Project Volume	With Project Volume
I-405 Freeway:					
Santa Fe Ave. (1064)	N/B	AM	7,386	7,828	8,013
		PM	6,003	5,764	5,817
	S/B	AM	7,866	8,620	8,642
		PM	10,475	11,304	11,419
North of Carson St. (1065)	N/B	AM	8,093	8,540	8,759
		PM	7,792	8,584	8,664
	S/B	AM	7,055	8,146	8,189
		PM	11,174	12,198	12,394
Marine Ave. (1066)	N/B	AM	9,024	9,727	9,762
		PM	10,352	11,160	11,340
	S/B	AM	7,638	7,950	8,142
		PM	11,995	12,242	12,301
I-110 Freeway:					
South of "C" St. (1044)	N/B	AM	4,293	4,616	4,665
		PM	2,710	2,982	2,998
	S/B	AM	2,786	3,061	3,070
		PM	4,258	4,661	4,709
North of Manchester Blvd. (1045)	N/B	AM	11,995	12,773	12,791
		PM	8,262	9,126	9,211
	S/B	AM	7,820	9,524	9,622
		PM	7,886	9,828	9,864
SR-91 Freeway:					
East of Alameda St. (1035)	E/B	AM	8,824	10,403	10,437
		PM	16,761	18,366	18,549
	W/B	AM	15,528	17,012	17,240
		PM	8,839	10,221	10,285
East of Cherry Ave. (1036)	E/B	AM	8,899	7,843	7,859
		PM	14,070	13,562	13,649
	W/B	AM	12,940	12,452	12,562
		PM	9,114	8,339	8,365

Table 11
Project Freeway Impacts
Existing and Future Levels of Service

CMP Station	Direction	Peak Hour	Future						
			Existing		Without Project		With Project		
			V/C	LOS	V/C	LOS	V/C	LOS	Impact
I-405 Freeway:									
Santa Fe Ave. (1064)	N/B	AM	0.92	D	0.98	E	1.00	F(0)	0.02*
		PM	0.75	C	0.72	C	0.73	C	0.01
	S/B	AM	0.98	E	1.08	F(0)	1.08	F(0)	0.00
		PM	1.31	F(1)	1.41	F(2)	1.43	F(2)	0.02*
North of Carson St. (1065)	N/B	AM	1.01	F(0)	1.07	F(0)	1.09	F(0)	0.02*
		PM	0.97	E	1.07	F(0)	1.08	F(0)	0.01
	S/B	AM	0.88	D	1.02	F(0)	1.02	F(0)	0.00
		PM	1.40	F(2)	1.52	F(3)	1.55	F(3)	0.03*
Marine Ave. (1066)	N/B	AM	1.13	F(0)	1.22	F(0)	1.22	F(0)	0.00
		PM	1.29	F(1)	1.40	F(2)	1.42	F(2)	0.02*
	S/B	AM	0.95	E	0.99	E	1.02	F(0)	0.03*
		PM	1.50	F(3)	1.53	F(3)	1.54	F(3)	0.01
I-110 Freeway:									
South of "C" St. (1044)	N/B	AM	0.54	B	0.58	C	0.58	C	0.00
		PM	0.34	A	0.37	B	0.37	B	0.00
	S/B	AM	0.35	A	0.38	B	0.38	B	0.00
		PM	0.53	B	0.58	C	0.59	C	0.01
South of Manchester Blvd. (1045)	N/B	AM	1.50	F(3)	1.60	F(3)	1.60	F(3)	0.00
		PM	1.03	F(0)	1.14	F(0)	1.15	F(0)	0.01
	S/B	AM	0.98	E	1.19	F(0)	1.20	F(0)	0.01
		PM	0.99	E	1.23	F(0)	1.23	F(0)	0.00
SR-91 Freeway:									
East of Alameda St. (1035)	E/B	AM	0.74	C	0.87	D	0.87	D	0.00
		PM	1.40	F(2)	1.53	F(3)	1.55	F(3)	0.02*
	W/B	AM	1.29	F(1)	1.42	F(2)	1.44	F(2)	0.02*
		PM	0.74	C	0.85	D	0.86	D	0.01
East of Cherry Ave. (1036)	E/B	AM	0.89	D	0.78	D	0.79	D	0.01
		PM	1.41	F(2)	1.36	F(2)	1.36	F(2)	0.00
	W/B	AM	1.29	F(1)	1.25	F(0)	1.26	F(1)	0.01
		PM	0.91	D	0.83	D	0.84	D	0.01

* Denotes significant project impact.

MITIGATION MEASURES

As required by the Department of Transportation (LADOT), the project must submit a Traffic Mitigation Plan (TMP) to reduce the project's significant traffic impacts to non-significant levels. In selecting the project's traffic mitigating measures, the City's top priority is reducing trip demand by single occupancy vehicles and promoting transit use. To achieve this trip reduction goal, the City has prioritized mitigation measures by category as listed below:

1. Transportation Demand Management (TDM) Programs;
2. Transit Capacity and Access Improvements;
3. Traffic Signal Operation Improvements (ATSAC);
4. Street Widening and Other Physical Improvements; and
5. Street Restriping and Parking Prohibitions.

The project's proposed TMP includes mitigation measures in several of the categories listed above. This recommended mitigation measures are:

Category 1 - TDM Programs

- o Compliance with Ordinance No. 168,700 (Transportation Demand Management and Trip Reduction Measures). This ordinance focuses on incorporating TDM facilities into the design of new buildings to promote alternative modes of transportation (see Appendix B). It should be followed in the design and construction of the project site and buildings.
- o Compliance with SCAQMD Rule 2202. The South Coast Air Quality Management District (SCAQMD) has adopted a rule designed to reduce the air pollution impacts of commute trips. This rule, unlike the rules it replaces, does not mandate trip reduction programs but allows individual employers to select from a variety of options. However, most employers have

continued to select ridesharing programs as the most cost-effective method of reducing air quality impacts. If site employers implement these trip reduction measures, 15 percent or more of the peak hour traffic generation from the industrial/office park component of the project could be eliminated.

Category 2 - Transit Improvements

- o Bus Transit Improvements. This project should work with the appropriate transit districts (i.e., Gardena Transit, Torrance Transit and MTA) to improve transit service to the site. Further, the sidewalks through the sites should be designed to provide attractive pedestrian routes to and from transit stops.

Categories 3, 4 and 5 - Signal System Improvements, Street Widenings and Restriping, and Parking Restrictions

- o 1. Hawthorne Boulevard and 190th Street -- Restripe 190th Street and restrict parking to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes.
- o 3. Crenshaw Boulevard and I-405 Freeway Southbound On/Off Ramps -- Modify the traffic signal to provide an eastbound right-turn phase to overlap the northbound left-turn phase.
- o 4. Crenshaw Boulevard and 190th Street -- Restripe 190th Street and restrict parking to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes.
- o 5. Crenshaw Boulevard and Del Amo Boulevard -- Restripe Crenshaw Boulevard, restrict parking and modify the traffic signal to provide dual left-turn lanes in the southbound direction.

continued to select ridesharing programs as the most cost-effective method of reducing air quality impacts. If site employers implement these trip reduction measures, 15 percent or more of the peak hour traffic generation from the industrial/office park component of the project could be eliminated.

Category 2 - Transit Improvements

- o Bus Transit Improvements. This project should work with the appropriate transit districts (i.e., Gardena Transit, Torrance Transit and MTA) to improve transit service to the site. Further, the sidewalks through the sites should be designed to provide attractive pedestrian routes to and from transit stops.

Categories 3, 4 and 5 - Signal System Improvements, Street Widening and Restriping and Parking

- o 1. Hawthorne Boulevard and 190th Street -- Restripe 190th Street and restrict parking to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes.
- o 3. Crenshaw Boulevard and I-405 Freeway Southbound On/Off Ramps -- Modify the traffic signal to provide an eastbound right-turn phase to overlap the northbound left-turn phase.
- o 4. Crenshaw Boulevard and 190th Street -- Restripe 190th Street and restrict parking to convert the existing eastbound and westbound right-turn-only lanes to through/right optional lanes.
- o 5. Crenshaw Boulevard and Del Amo Boulevard -- Restripe Crenshaw Boulevard, restrict parking and modify the traffic signal to provide dual left-turn lanes in the southbound direction.

- o 7. Western Avenue and Artesia Boulevard -- Restripe Western Avenue and restrict parking to convert the existing northbound and southbound right-turn-only lanes to through/right optional lanes.
- o 8. Western Avenue and 182nd Street -- Restripe Western Avenue and restrict parking to provide separate northbound and southbound right-turn-only lanes.
- o 9. Western Avenue and I-405 Freeway Northbound On/Off-Ramps -- Widen and restripe the westbound approach to the intersection (i.e., the off-ramp) to provide two left-turn-only lanes and a right-turn-only lane instead of the existing two-lane configuration.
- o 10. I-405 Freeway Southbound On/Off-Ramps and 190th Street -- Flare the west leg of the intersection, restripe 190th Street, restrict parking and modify the signal to provide dual left-turn lanes in the eastbound direction.
- o 11. Western Avenue and 190th Street -- Restripe the north leg of the intersection and modify the signal to provide dual southbound left-turn lanes. Additionally, fund the installation of the City's Automated Traffic Surveillance and Control (ATSAC) signal timing system at this location. The ATSAC system provides real-time traffic flow monitoring and signal timing modifications, to maximize intersection capacity.
- o 13. Western Avenue and Project Roadway -- Construct the internal project roadway to provide a three lane westbound approach to Western Avenue including a left-turn-only lane, a through/left optional lane and a right-turn-only lane.

- o 14. Western Avenue and Del Amo Boulevard -- Restripe the eastbound approach to convert the through lane to through/left optional lane.
- o 15. Western Avenue and Torrance Boulevard -- Modify the median island and restripe the roadway along Torrance Boulevard, and modify the signal equipment to provide dual eastbound left-turn lanes. Restrict parking and flare the roadway to provide a northbound right-turn-only lane.
- o 16. Western Avenue and Carson Street -- Restrict parking and flare both roadways to provide right-turn-only lanes in the westbound, eastbound and northbound direction.
- o 17. Western Avenue and Sepulveda Boulevard -- Restrict parking and flare Western Avenue to provide right-turn-only lanes in the northbound and southbound directions.
- o 18. Western Avenue and Sepulveda Boulevard -- Restrict parking and flare Western Avenue to provide right-turn-only lanes in the northbound and southbound directions.
- o 19. Project Roadway and 190th Street -- Flare the roadway, restrict parking and restripe 190th Street to provide dual left-turn-only lanes in westbound direction and a right-turn-only lane in the eastbound direction. Construct the internal project roadway to provide a three-lane northbound approach including a left-turn-only lane, a through/left optional lane and a right-turn-only lane. Construct the signal to provide east- and westbound left-turn phasing, opposed north/south phasing (assuming a driveway along the north curb is a fourth intersection leg) and an eastbound right-turn phase

concurrent with the northbound phase. Fund the installation of ATSAC at this intersection.

- o 20. Normandie Avenue and Artesia Boulevard -- Provide dual left-turn lanes in the southbound direction by restriping and flaring Normandie Avenue, restricting parking and modifying the signal.
- o 22. Normandie Avenue and I-405 Freeway Northbound On/Off-Ramps -- Widen the westbound approach (off-ramp) to provide two left-turn-only lanes and one right-turn-only lane instead of the existing two-lane approach. Additionally, restripe the northbound approach to provide two through lanes and an exclusive right-turn-only lane to facilitate freeway access.
- o 23. I-405 Freeway Southbound Off-Ramp/Project Driveway and 190th Street -- Widen and restripe 190th Street and restrict parking to provide dual westbound left-turn lanes. Construct the project driveway to provide dual left-turn lanes and a right-turn-only lane in the northbound direction. Flare the off-ramp to provide a left-turn-only lane, one through lane and a shared through/right-turn lane in the southbound direction. Install a signal with separate westbound and northbound left-turn phasing.
- o 24. Normandie Avenue and 190th Street -- Flare 190th Street and modify the signal and railroad crossing equipment to provide dual left-turn-only lanes in the eastbound and westbound directions. Modify the signal equipment to provide a southbound right-turn overlap phase. Restrict parking and restripe Normandie Avenue to provide a third northbound travel lane. Additionally, fund the installation of ATSAC at this location.

- o 25. Normandie Avenue and Project Roadway/Francisco Street -- Construct the project roadway to provide a three-lane eastbound approach including a left-turn-only lane, a through/left optional lane and a right-turn-only lane. Modify the signal to provide opposed phasing the eastbound and westbound directions.
- o 26. Normandie Avenue and Torrance Boulevard -- Restrict parking and restripe Normandie Avenue to provide a third northbound through lane. Restrict parking and restripe Torrance Boulevard to provide a westbound right-turn-only lane.
- o 27. Normandie Avenue and Carson Street -- Restrict parking and restripe Carson Street to provide a westbound right-turn-only lane.
- o 30. Vermont Avenue and Artesia Boulevard -- Flare and restripe Vermont Avenue and modify the signal equipment to provide dual left-turn lanes in the northbound and southbound directions.
- o 31. Vermont Avenue and 190th Street -- Restripe 190th Street and modify the signal equipment to provide dual left-turn lanes in the eastbound and westbound directions. Fund the installation of ATSAC at this intersection.
- o 32. Vermont Avenue and Torrance Boulevard -- Restrict parking and restripe Vermont Avenue to provide a right-turn-only lane in the northbound direction.
- o 33. Vermont Avenue and Carson Street -- Restrict parking and restripe Vermont Avenue to provide a southbound right-turn-only lane.

- o 34. I-110 Freeway Southbound Off-Ramp and 190th Street -- Flare the southbound approach (off-ramp) to provide three lanes including a left-turn-only lane, a left/right optional lane and a right-turn-only lane instead of the existing two-lane approach.
- o 35. I-110 Freeway Northbound On-Ramp and 190th Street -- Modify the median island, restrict parking and restripe 190th Street to provide dual eastbound left-turn lanes.
- o 36. Figueroa Street and 190th Street -- Restrict parking and restripe Figueroa Street to provide a southbound right-turn-only lane.
- o 39. Hamilton Avenue and Torrance Boulevard -- Restrict parking and restripe Hamilton Avenue to provide a three-lane southbound approach including a left-turn-only lane, a left/right optional lane and a right-turn-only lane.
- o 40. Figueroa Street and Torrance Boulevard -- Restrict parking and restripe Figueroa Street to provide a southbound right-turn-only lane.

Table 12 summarizes the CMA values at the significantly impacted intersections with the physical (Categories 3, 4 and 5) mitigating measures listed above. It does not, however, consider the trip reduction benefits of the Category 1 and 2 measures. As this table shows, while the Harbor Gateway Center multi-use development will add to the cumulative traffic flow in the study area, it will be able to reduce significant impacts upon traffic conditions at most locations once the proposed traffic mitigating measures are installed. Significant traffic impacts could remain, however, at two intersections and on area freeways. Cumulative programs, such as regional transit system improvements, ridesharing requirements, and regional roadway capacity enhancements will mitigate these remaining impacts to some degree.

Table 12
Critical Movement Analysis Summary
Future (Year 2006) Traffic Conditions
With Project Mitigation

<u>No.</u>	<u>Intersection</u>	<u>Peak Period</u>	<u>Without Project</u>		<u>With Project With Mitigation</u>		
			<u>CMA</u>	<u>LOS</u>	<u>CMA</u>	<u>LOS</u>	<u>IMPACT</u>
1.	Hawthorne Blvd. and 190th St.	AM PM	1.065 1.239	F F	1.049 1.199	F F	- 0.016 - 0.040
3.	Crenshaw Blvd. and San Diego Fwy. S/B on/off-ramps	AM PM	1.043 0.957	F E	0.972 0.883	E D	- 0.071 - 0.074
4.	Crenshaw Blvd. and 190th St.	AM PM	1.279 1.313	F F	1.127 1.209	F F	- 0.152 - 0.104
5.	Crenshaw Blvd. and Del Amo Blvd.	AM PM	0.893 0.988	D E	0.872 0.985	D E	- 0.021 - 0.003
7.	Western Ave. and Artesia Blvd.	AM PM	1.025 1.073	F F	1.024 1.052	F F	- 0.001 - 0.021
8.	Western Ave. and 182nd St.	AM PM	0.585 0.758	A C	0.593 0.769	A C	+ 0.008 + 0.011
9.	Western Ave. and San Diego Fwy. N/B on/off-ramps	AM PM	0.703 0.892	C D	0.691 0.836	B D	- 0.012 - 0.056
10.	San Diego Fwy. S/B on/off-ramps	AM PM	1.176 1.131	F F	1.166 1.090	F F	- 0.010 - 0.041
11.	Western Ave. and 190th St.	AM PM	0.822 1.171	D F	0.849 1.237	D F	+ 0.027* + 0.066*
13.	Western Ave. and Project Dwy.	AM PM	0.360 0.418	A A	0.566 0.488	A A	0.206 0.070
14.	Western Ave. and Del Amo Blvd.	AM PM	0.839 0.872	D D	0.810 0.785	D C	- 0.029 - 0.087
15.	Western Ave. and Torrance Blvd.	AM PM	1.002 1.055	F F	0.999 1.015	E F	- 0.003 - 0.040
16.	Western Ave. and Carson St.	AM PM	0.877 1.041	D F	0.851 1.001	D F	- 0.026 - 0.040
17.	Western Ave. and Sepulveda Blvd.	AM PM	1.062 1.164	F F	0.983 1.103	E F	- 0.079 - 0.061
18.	Western Ave. and Pacific Coast Hwy.	AM PM	0.999 1.037	E F	0.980 1.041	E F	- 0.019 + 0.004
19.	Project Dwy. and 190th St.	AM PM	0.623 0.849	B D	0.649 0.795	B C	+ 0.026 - 0.054

Table 12 (cont.)
Critical Movement Analysis Summary
Future (Year 2006) Traffic Conditions
With Project Mitigation

<u>No.</u>	<u>Intersection</u>	<u>Peak Period</u>	<u>Without Project</u>		<u>With Project With Mitigation</u>		
			<u>CMA</u>	<u>LOS</u>	<u>CMA</u>	<u>LOS</u>	<u>IMPACT</u>
20.	Artesia Blvd. and Normandie Ave.	AM PM	1.028 1.148	F F	0.990 1.075	E F	- 0.038 - 0.073
22.	Normandie Ave. and San Diego Fwy. N/B on/off-ramps	AM PM	0.594 0.669	A B	0.597 0.678	A B	+ 0.003 + 0.009
23.	San Diego Fwy. off-ramp and 190th St.	AM PM	0.756 0.749	C C	0.749 0.757	C C	- 0.007 + 0.008
24.	Normandie Ave. and 190th St.	AM PM	0.756 0.835	C D	0.934 0.985	E E	+ 0.178* + 0.150*
25.	Normandie Ave. and Project Dwy./ Francisco St.	AM PM	0.411 0.373	A A	0.517 0.527	A A	+ 0.106 + 0.154
26.	Normandie Ave. and Torrance Blvd.	AM PM	0.735 0.727	C C	0.639 0.765	B C	- 0.096 + 0.038
27.	Normandie Ave. and Carson St.	AM PM	0.696 0.865	B D	0.706 0.874	C D	+ 0.010 + 0.009
30.	Vermont Ave. and Artesia Blvd.	AM PM	1.015 0.969	F E	0.889 0.874	D D	- 0.126 - 0.095
31.	Vermont Ave. and 190th St.	AM PM	0.852 1.137	D F	0.763 1.081	C F	- 0.089 - 0.056
32.	Vermont Ave. and Torrance Blvd.	AM PM	0.730 0.831	C D	0.719 0.848	C D	- 0.011 + 0.017
33.	Vermont Ave. and Carson St.	AM PM	0.847 0.926	D E	0.849 0.931	D E	+ 0.002 + 0.005
34.	Harbor Fwy. S/B off-ramp and 190th St.	AM PM	0.639 0.802	B D	0.535 0.771	A C	- 0.104 - 0.031
35.	Harbor Fwy. N/B on-ramp and 190th St.	AM PM	0.386 0.771	A C	0.375 0.581	A A	- 0.011 - 0.190
36.	Figuerroa St. and 190th St.	AM PM	0.525 0.781	A C	0.595 0.789	A C	+ 0.070 + 0.008
39.	Hamilton Ave. and Torrance Blvd.	AM PM	0.846 0.952	D E	0.693 0.740	B C	- 0.153 - 0.212
40.	Figuerroa St. and Torrance Blvd.	AM PM	0.819 0.869	D D	0.832 0.884	D D	+ 0.013 + 0.015

* Denotes significant impact

APPENDIX A

TRAFFIC GENERATION BY PHASE

APPENDIX A

Traffic Generation By Phase

Phase I								
Land Use Category	Size (Sq. Ft.)	Daily Traffic	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Phase I								
Shopping Center Gross Generation								
Retail*	355,000	13,840	196	115	311	656	656	1,312
Restaurant - Quality	10,000	910	6	3	9	50	24	74
Restaurant - High Turnover	10,000	1,780	75	73	148	72	57	129
Restaurant - Fast Food	10,000	7,100	285	274	559	190	176	366
Theater - 4,000 seats	65,000	1,930	76	44	120	154	86	240
Subtotal	450,000	25,560	638	509	1,147	1,122	999	2,121
Less Shopping Center Internal/Pass-By Trips								
Retail (0%/20%)		(2,770)	(39)	(23)	(62)	(131)	(131)	(262)
Restaurant - Quality (20%/10%)		(270)	(2)	(1)	(3)	(15)	(7)	(22)
Restaurant - High Turnover (20%/20%)		(710)	(30)	(29)	(59)	(29)	(23)	(52)
Restaurant - Fast Food (20%/50%)		(4,970)	(200)	(192)	(392)	(133)	(123)	(256)
Theater (10%/10%)		(390)	(15)	(9)	(24)	(31)	(17)	(48)
Subtotal		(9,110)	(286)	(254)	(540)	(339)	(301)	(640)
Site Generation	450,000	16,450	352	255	607	783	698	1,481
Less Existing Site Generation								
Warehouse**	(600,000)	(2,120)	(151)	(59)	(210)	(96)	(178)	(274)
Net Site Generation Increase	(150,000)	14,330	201	196	397	687	520	1,207

* Rate for 450,000 sq. ft. Shopping Center used.

** Rate for 2.4 million sq. ft. Warehouse used. Building area removal based on acreage of phase.

APPENDIX A (cont.)
Traffic Generation By Phase

<u>Land Use Category</u>	Phase II							
	<u>Size (Sq. Ft.)</u>	<u>Daily Traffic</u>	<u>AM Peak Hour</u>			<u>PM Peak Hour</u>		
			<u>In</u>	<u>Out</u>	<u>Total</u>	<u>In</u>	<u>Out</u>	<u>Total</u>
<u>Phase II</u>								
Office Park	507,000	5,630	779	96	875	106	598	704
Industrial Park	<u>804,100</u>	<u>4,750</u>	<u>524</u>	<u>71</u>	<u>595</u>	<u>78</u>	<u>444</u>	<u>522</u>
Subtotal	1,311,100	10,380	1,303	167	1,470	184	1,042	1,226
Less Existing Site Generation								
Warehouse**	(1,000,000)	(3,540)	(251)	(98)	(349)	(160)	(297)	(457)
Net Site Generation Increase	<u>311,100</u>	<u>6,840</u>	<u>1,052</u>	<u>69</u>	<u>1,121</u>	<u>24</u>	<u>745</u>	<u>769</u>
Total Phases I & II	161,100	21,170	1,253	265	1,518	711	1,265	1,976

APPENDIX A (cont.)

Traffic Generation By Phase

<u>Land Use Category</u>	<u>Size (Sq. Ft.)</u>	<u>Daily Traffic</u>	Phase III					
			<u>AM Peak Hour</u>			<u>PM Peak Hour</u>		
			<u>In</u>	<u>Out</u>	<u>Total</u>	<u>In</u>	<u>Out</u>	<u>Total</u>
Industrial Park***	1,206,600	5,970	581	79	660	53	297	350
Less Existing Site Generation Warehouse**	(819,000)	(2,900)	(206)	(80)	(286)	(131)	(243)	(374)
Net Site Generation Increase	<u>387,600</u>	<u>3,070</u>	<u>375</u>	<u>(1)</u>	<u>374</u>	<u>(78)</u>	<u>54</u>	<u>(24)</u>
TOTAL PHASES I, II & III	548,700	24,240	1,628	264	1,892	633	1,319	1,952

* Rate for 450,000 sq. ft. Shopping Center used.

** Rate for 2.4 million sq. ft. Warehouse used. Building area removal based on acreage of phase.

*** Remaining trips for 2,010,700 sq. ft. Industrial Park used.

APPENDIX B

TDM ORDINANCE (NO.168,700)

SUBJECT : TRANSPORTATION DEMAND MANAGEMENT AND TRIP REDUCTION MEASURES

ORDINANCE NO. 168700

An ordinance adding Subsection J to Section 12.26 of the Los Angeles Municipal Code to provide transportation demand management features within new buildings which would facilitate the use of alternative transportation modes to decrease dependency on vehicles carrying only one person.

THE PEOPLE OF THE CITY OF LOS ANGELES
DO ORDAIN AS FOLLOWS:

Section 1. A new Subsection J is hereby added to Section 12.26 of the Los Angeles Municipal Code to read:
J. Transportation Demand Management and Trip Reduction Measures.

1. **DEFINITIONS.** For the purpose of this section, certain words and terms are defined as follows:

Carpool. A vehicle carrying two to five persons to and from work on a regular schedule.

Development. The construction of new non-residential floor area.

Gross Floor Area. That area in square feet confined within the outside surface of the exterior walls of a building, as calculated by adding the total square footage of each of the floors in the building, except for that square footage devoted to vehicle parking and necessary interior driveways and ramps.

Preferential Parking. Parking spaces, designated or assigned through use of a sign or painted space markings for Carpools or Vanpools, that are provided in a location more convenient to the entrance for the place of employment than parking spaces provided for single-occupant vehicles.

Transportation Demand Management (TDM). The alteration of travel behavior through programs of incentives, services, and policies, including encouraging the use of alternatives to single-occupant vehicles such as public transit, cycling, walking, carpooling/vanpooling and changes in work schedule that move trips out of the peak period or eliminate them altogether (as in the case in telecommuting or compressed work weeks).

Trip Reduction. Reduction in the number of work-related trips made by single-occupant vehicles.

Vanpool. A vehicle carrying six or more persons to and from work on a regular schedule, and on a prepaid basis.

Vehicle. Any motorized form of transportation, including but not limited to automobiles, vans, buses and motorcycles.

2. **APPLICABILITY.** This subdivision applies only to the construction of new non-residential gross floor area. Prior to the issuance of a building permit, the owner/applicant shall agree, by way of a covenant that runs with the land, to provide and maintain in a state of good repair the following applicable transportation demand management and trip reduction measures.

3. **REQUIREMENTS:**

(a) Development in excess of 25,000 square feet of gross floor area. The owner shall provide a bulletin board, display case, or kiosk (displaying transportation information) where the greatest number of employees are likely to see it. The transportation information displayed should include, but is not limited to, the following:

- (1) Current routes and schedules for public transit serving the site;
- (2) Telephone numbers for referrals on transportation information including numbers for the regional ridesharing agency and local transit operations;
- (3) Ridesharing promotion material supplied by commuter-oriented organizations;
- (4) Regional/local bicycle route and facility information;
- (5) A listing of on-site services or facilities which are available for carpoolers, vanpoolers, bicyclists, and transit riders.

(b) Development in excess of 50,000 square feet of gross floor area. The owner shall comply with Paragraph (a) above and in addition shall provide:

(1) A designated parking area for employee carpools and vanpools as close as practical to the main pedestrian entrance(s) of the building(s). This area shall include at least ten percent of the parking spaces required for the site. The spaces shall be signed and striped sufficient to meet the employee demand for such spaces. The carpool/vanpool parking area shall be identified on the driveway and circulation plan upon application for a building permit;

(2) One permanent, clearly identified (signed and striped) carpool/vanpool parking space for the first 50,000 to 100,000 square feet of gross floor area and one additional permanent, clearly identified (signed and striped) carpool/vanpool parking space for any development over 100,000 square feet of gross floor area;

(3) Parking spaces clearly identified (signed and striped) shall be provided in the designated carpool/vanpool parking area at any time during the building's occupancy sufficient to meet employee demand for such spaces. Absent such demand, parking spaces within the designated carpool/vanpool parking area may be used by other vehicles;

(4) No signed and striped parking spaces for carpool/vanpool parking shall displace any handicapped parking;

(5) A statement that preferential carpool/vanpool spaces are available on-site and a description of the method for obtaining permission to use such spaces shall be included on the required transportation information board;

(6) A minimum vertical clearance of 7 feet 2 inches shall be provided for all parking spaces and accessways used by vanpool vehicles when located within a parking structure;

(7) Bicycle parking shall be provided in conformance with Section 12.21 A 16 of this Code.

(c) Development in excess of 100,000 square feet of gross floor area. The owner shall comply with Paragraphs (a) and (b) above and shall provide:

(1) A safe and convenient area in which carpool/vanpool vehicles may load and unload passengers other than in their assigned parking area;

(2) Sidewalks or other designated pathways following direct and safe routes from the external pedestrian circulation system to each building in the development;

(3) If determined necessary by the City to mitigate the project impact, bus stop improvements shall be provided. The City will consult with the local bus service providers in determining

appropriate improvements. When locating bus stops and/or planning building entrances, entrances shall be designed to provide safe and efficient access to nearby transit stations/stops;

(4) Safe and convenient access from the external circulation system to bicycle parking facilities on-site.

4. **EXCEPTIONS.** The provisions of this subsection shall not apply to developments for which an application has been deemed complete by the City pursuant to Government Code Section 65943, or for which a Notice of Preparation for a Draft Environmental Impact Report has been circulated or for which plans sufficient for a complete plan check were accepted by the Department of Building and Safety, on or before the effective date of this ordinance.

5. **MONITORING.** The Department of Transportation shall be responsible for monitoring the owner/applicant's continual implementation and maintenance of the project trip reduction features required by this ordinance.

6. **ENFORCEMENT.** Applicants shall execute and record a Covenant and Agreement that the trip reduction features required by this ordinance will be maintained, that required material specified in Subdivision 3 (a) (1)-(3) will be continually posted, and that additional carpool/vanpool spaces within the designated preferential area will be signed and striped for the use of ridesharing employees based on demand for such spaces. The Covenant and Agreement shall be acceptable to the Department of Transportation.

7. **HARDSHIP EXEMPTION.** In cases of extreme hardship, duly established to its satisfaction, the City Council, acting in its legislative capacity, and by resolution, may grant an exemption from any/or all the provisions of this Ordinance. In granting such an exemption, the City Council shall make the following findings:

(a) Specific features of the development make it infeasible to satisfy all of the provisions of this subsection; and

(b) The applicant has committed to provide equivalent alternative measures to reduce vehicle trips.

Sec. 2. URGENT CLAUSE. The City Council declares that this ordinance is required for the immediate preservation of the public peace, health and safety. The City is required to comply, in a timely manner, with the State mandated Congestion Management Program. This ordinance

would prevent the potential loss to the City of millions of dollars in gas tax revenues. The loss of these funds would result in a threat to the peace, health and safety of the citizens of this City because the repair of essential streets and highways would not be feasible without the State funds. Accidents would occur and congestion due to impassible streets would result in pollution inimicable to the health and safety of the residents of the City. For these reasons this ordinance shall become effective upon publication, pursuant to Section 218 of the Los Angeles City Charter.

Sec. 3. The City Clerk shall certify to the passage of this ordinance and cause the same to be published in some daily newspaper printed and published in the City of Los Angeles.

I hereby certify that the foregoing ordinance was passed by the Council of the City of Los Angeles, at its meeting of MAR 23 1993

ELIAS MARTINEZ, City Clerk,

By [Signature] Deputy.

Approved MAR 26 1993

Approved as to Form and Legality

3/17/93
JAMES K. HAHN, City Attorney.

By Claudia Cullum

File No. 93-0456

Submitted to and approved by the City Planning Commission.

MAR 16 1993

See attached report
[Signature]
Director of Planning